



COLONY OF MAURITIUS

Annual Report
OF THE
Department of Agriculture
for the year 1957

[PRICE : R 1]

PRINTED AND PUBLISHED BY
J. ELIEL FELIX, I.S.O., GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
FEBRUARY 1959

No. 5 of 1959

26 MAY 1959



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To

THE HONOURABLE THE MINISTER OF AGRICULTURE AND LANDS.

Sir,

I have the honour to submit the Annual Report of the Department of Agriculture for the year 1957.

I have the honour to be,

Sir,

Your obedient servant,

A. NORTH COOMBES,

Acting Director of Agriculture.

Department of Agriculture,

Reduit,

30th July, 1958.

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Annual Report of the Department of Agriculture for the year 1957

I. General Review

The outstanding event of the year in the life of the Department of Agriculture has been the switch over from direct administration by the Central Government to ministerial administration. The change over has been brought about with great smoothness and much understanding, a result upon which all concerned may look with satisfaction.

POLICY

2. The broad lines of departmental agricultural policy remain unaltered and continue to centre around the maximum utilization of all the land resources to the best advantage of the people of Mauritius. The Department of Agriculture plans its experimental, extension and development work in accordance with the above policy in fulfilment of the task entrusted to it by the Ministry of Agriculture and Lands.

3. To assist the Ministry and the Department in carrying out the above policy, legislation was promulgated modifying and simplifying the establishment of the Board of Agriculture, Fisheries and Natural Resources, which acts as a high level advisory body. By the end of the year, it was expected that the new board would be able to begin functioning in the first half of 1958.

DEVELOPMENT

4. A great deal of attention was given during the year to the review, and projection for another five years in accordance with general Government Policy of the Capital Expenditure Programme. A number of new projects were included, and these were added towards the end of the year. The final programme is expected to involve expenditure to June 1962 totalling some 22 million rupees.

FINANCE DIVISION

5. One of the first tasks of the new Ministry of Finance has been the overhauling of government's financial control and the creation in departments of special finance divisions, thereby enabling departments to cope more efficiently with the more exacting administration of their finances which their present state of development demands. The creation in the Department of Agriculture of a Finance Division with effect from 21st November, 1957 was given a high degree of priority although this inevitably caused some considerable re-adjustment of the administrative branch.

HEAD OFFICE

6. The much increased amount of work resulting from the larger commitments of the Department has necessitated a reorganisation of the administrative offices which no longer responded to present day conditions. In drawing up the plans, consideration was given to the findings of the Working Party set up by Government to place the administration of the Colony on a modern footing. Provision was made for an enlarged registry and a larger correspondence section, for the new Finance Division (temporarily housed in the Agricultural Division block), for resident auditors and machine accounting. By the end of the year the plans had been approved and the prospects of completing these alterations in the current financial year were definitely promising.

TRAINING

7. Policy cannot be implemented without adequately trained personnel. Initially, the Department of Agriculture depends to such a large extent on the men trained at the College of Agriculture that it is necessary to ensure that a steady flow of officers is available from that source. It is necessary also to ensure that senior and specialist staff are obtained either by direct recruiting or by special training of promising officers. The programme originally laid down to satisfy the immediate requirements has gone a long way to fill the gaps. By the end of the year, however, there were still a few officers abroad on study leave, while a number of vacancies, especially in the less senior ranks perforce remained unfilled, the output from the College of Agriculture being as yet insufficient to meet all requirements.

8. With a view to meeting present and future exigencies in the more advanced activities which are now characterizing the agricultural and industrial life of Mauritius, the Ministry of Agriculture and Lands towards the end of the year approved of the appointment of a committee to make proposals for a complete reorganisation of the diploma courses at the College of Agriculture, the intention being to train two streams of students, one predominantly in "General Agriculture", the other in "Sugar Technology". The opportunity is being taken of reviewing also the whole system of scholarships both for admission and for post diplomate specialisation.

CLIMATIC CONDITIONS AND SUGAR PRODUCTION

9. Rainfall was well below normal for the whole of Mauritius in 1957, the northern and western districts as well as the coastal parts of the eastern and south-eastern, suffering from severe drought conditions. With about one exception, there was practically entire absence throughout the year of the heavy precipitation usually brought about by cyclonic disturbances affecting the Mauritius area. In spite of the severely dry conditions which ensued, the 1957 sugar crop reached the high figure of 561,606 metric tons, i.e., more than 40,000 tons above the estimate made in June. This unexpectedly high production was due to the exceptionally favourable conditions prevailing during the maturing season which resulted in the very high sugar recovery of 12.93 per cent of cane. Added to these, increased factory capacity and absence of social disturbances are factors which have resulted in a speedy realisation of a large harvest and contributed to the good start of the 1958 crop.

10. The year 1957 having been declared a drought year for a number of factory areas under the provisions of the Cyclone and Drought Insurance Ordinance, it is expected that some eight million rupees will be paid out as compensation from the Fund set up under the ordinance. This will be the first time that the Fund, whose assets at the end of 1957 stood at about 125 million rupees, will be called upon to pay out.

11. The Department of Agriculture has maintained throughout the year the three major and essential services which it continues to provide for the Sugar Industry, namely the Central Arbitration Board for the purchase and sales of canes, the College of Agriculture from which the industry obtains its field, factory and laboratory technicians, and the Extension Services for Small Planters which is responsible for advisory and demonstration work among the 15,000 or so small planters of the Island,

12. The Department has also maintained close contact and cooperation with the various organisations set up by the Sugar Industry and has provided for the control of the administration of the Sugar Industry Rehabilitation Funds, including the Sugar Planters' Rehabilitation Fund and the increasingly active Small Planters' Mechanical Pool.

TEA

13. The work undertaken in 1957 has carried the development of the Department's Tea Project beyond the inevitable initial difficulties encountered with all new schemes of this nature. By the end of the year, 1,045 acres of new land had been cleared, of which 670 acres had been planted. At the same time in order to meet expansion requirements, new seed gardens were laid down or completed, while to cope with immediate requirements seven thousand pounds of seed of approved varieties were imported.

14. The island's production of made tea, at 1,893,752 pounds, was the highest on record, exceeding last year's by more than 350,000 lb. Much of this increase was due to the maturing of new tea areas. The total area under tea increased by 640 acres over the 1956 area, while the yield per arpent in bearing reached 761 pounds of made tea as compared with 646 pounds in 1956. Exports totalled over 969,200 pounds being 635 pounds greater than in the previous year, while imports sank to 19,400 pounds, the lowest figure on record.

15. Some major difficulties unexpectedly arose during the year in connection with the plans whereby, by agreement with Government, certain factories would secure long-term loans for enlargement in order to be able to cope with the expected larger crop of leaf from the newly planted areas. These difficulties were finally resolved by Government undertaking to erect a factory of its own of an initial capacity of 750,000 pounds made tea, easily capable of expansion to 1,500,000 pounds, to be erected and operated on contract terms by a Mauritius subsidiary of the Nuwara Eliya Tea Estates, one of the best known tea producing companies in Ceylon.

FIBRE

16. The production of aloe fibre having shown a steady decline for the last few years, the Board of the Government Sack Factory decided to maintain in 1957 the prices ruling for fibre in 1956, in spite of the fact that according to the Tripartite Agreement between the Fibre Producers, the Sack Factory and the Sugar Millers a 10 per cent reduction should have been applied. This seems to have achieved the desired effect as production of fibre in 1957 rose above that of 1956 by 212 tons.

17. The financial situation of the Sack Factory has been placed on firmer ground by Government agreeing to consolidate its interest-bearing loans to the Factory into a new interest free loan redeemable in 30 years.

TOBACCO INDUSTRY

18. For some years the policy of the Tobacco Board has been to foster the production of better quality tobacco by increasing the plantation permits of flue-cured Virginian tobacco and reducing those of flue-cured Amarello. In practice, this is translated by a larger total area under tobacco, since Amarello is a heavier yielder. The area under tobacco in 1957 was 796 arpents as compared with 690 arpents in 1956 and 488 in 1955. Total production, however, is not necessarily larger, but in 1957 it was 438 tons, as compared with 404 tons in 1956. There was a notable increase in flue-cured Virginian types of which 222 tons were produced as against 162 tons last year.

19. As a result of the above policy, the usings of imported leaf in local cigarette manufacture dropped from 26.2 per cent in 1955 to 22.8 per cent in 1956 and 18.8 per cent in 1957.*

20. Prospects of developing a small export trade in flue-cured tobacco are still negligible, and only a small quantity of air-cured (Burley) tobacco—just under 58 tons—was exported.

PRODUCTION OF FOODSTUFFS

21. The total area under the various food crops in usual production in Mauritius remained practically the same as last year's although there was a drop of some 800 arpents in the area grown to maize and a shortfall of about 350 arpents in the area under potatoes. Overall production remained at about the same level through new lands being cleared and being put under food crops as part of rotational cropping with sugar cane.

22. The activities of the Crop Extension Service of the Department increased appreciably, totalling 8,400 visits for the year as against 7,500 in 1956. Through its practical demonstrations this new service is achieving excellent results, mainly in the increased yields following the adoption of the use of complete fertilizers by small planters hitherto applying only nitrogenous fertilizers to their crops. Increases in yields of groundnuts, tomatoes, potatoes and beans from 25 to 50 per cent are being achieved in many areas.

23. Two notable achievements in regard to the improvement of small planters' cane production are worth recording in this general review. The first is the acceptance of a proposal for early implementation of a Cane Seed Producing Station where cane setts previously cleared of ratoon stunting disease by hot water treatment at the Mauritius Sugar Industry Research Institute will be planted for the production of healthy cuttings exclusively for small planters' lands. The second is the establishment on the lands of 34 individual small planters of anti-erosion demonstration plots which have already given excellent results now being copied by adjoining planters.

LIVESTOCK

24. The renovation and modernisation of the Artificial Insemination Centre at Réduit has been completed, except for the renewal of the roof which is scheduled for 1958. The Centre has been provided with exercising yards for the bulls and this has produced a marked improvement in their condition.

25. Considerable progress was made in the alterations to the Government Dairy and at the Palmar Cattle Breeding Centre, both of which were operating satisfactorily at the end of the year.

26. Towards the end of the year a small veterinary laboratory comprising pathological and biological sections was set up. This has enabled the Livestock Division to initiate investigation into bovine, canine and avian diseases and to prepare its own vaccines at present mainly for use against Newcastle disease and fowl pox.

27. A vigorous drive was made in the first steps of a programme to rid the herd and milk cattle of the Island of tuberculosis. 2,508 head of the first or practically the whole herd cattle population of Mauritius, and 455 of the second were tuberculin tested, reactors (16 and 3 per cent respectively) being destroyed by slaughter.

* The figures for Tobacco refer to the year ending on 30th June, 1958.

28. The staff of the Extension Service was increased by three Stock Inspectors and four Livestock Assistants. This has enabled the service to extend its activities over all parts of Mauritius, sub-offices in the districts now totalling 16. One of the Stock Inspectors was posted permanently to Rodrigues, the first time that this has been possible in the history of the Division.

29. Finally, considerable attention was given during the year to the conditions governing the importation of cattle on the hoof for slaughter so that the country can be kept as clear as possible from contagious diseases of which, if tuberculosis be excepted, it is fortunately still very free. This protection is an essential part of the overall work undertaken to improve and increase the production of livestock and livestock products in Mauritius.

LAND SETTLEMENT AND ALLOTMENT SCHEMES

30. The difficulty of securing satisfactory land for allotment purposes, either by purchase or from other Crown organisations, has delayed progress in the establishment of new allotments. Difficulties were also experienced in securing for a sufficiently long time the indispensable heavy mechanical equipment without which such schemes cannot be launched. By the end of the year, however, further development into allotments of Crown Lands at Palmar and at the Vale was in sight, extension of the Petit Sable Settlement by another 75 acres was adopted; land at Bemanique formerly belonging to the old District Board of Grand Port--Savanne was explored, and consideration was given to occupying some of the lands at Plaisance Airport.

31. On the existing settlement schemes at Richelieu and Terre Rouge the irrigation works undertaken by the Department were completed at an average capitalisation cost of Rs. 530 per arpent.

32. A scheme whereby the tenants can purchase their dwellings on some of the older settlements was implemented, 24 of the 50 existing houses being sold on terms favourable to the occupiers.

EXPERIMENT STATIONS

33. The development of all five crop experiment stations, and the modification of their layout on the contour where necessary, progressed ahead of schedule to the verge of completion. The general character of the various stations is now well-defined. A wide range of cropping in which grass and vegetables are prominent has been proved possible in the wet uplands at Curepipe, with the help of heavy doses of fertilizers, protection against wind, and timely planting. 25 acres are now under grass there, the product being used to supply in part the fodder requirements of the Government Dairy. At the dry end of the scale, at Richelieu, production of arable or grass and silage crops under irrigation have been of a high order, maize grown for silage giving 14 tons of totally utilisable feed per acre.

34. The increased acreage at Barkly Experiment Station has been brought into cultivation mostly for the production of vegetable seeds. The popularity of the locally produced seeds goes on increasing, the sales for the year (inclusive of nursery plants and seedlings) totalling Rs 36,090 against Rs 32,242 in 1956. There is still scope for development, especially in regard to beans of which increasingly large quantities are being sold for seed. As the need for protein food is still great, every encouragement is given to such development and recent work at Richelieu has shown that the crop can be remunerative under mechanized methods if attacks of the bean fly are kept under control.

35. The work on Citrus with a view to the possibility of re-establishing a local supply of a fruit rich in Vitamin C has continued. Progress is necessarily somewhat slow owing to shortage of suitable budwood, the presence of soil nutritional deficiencies, and the absolute need to establish wind-breaks.

36. Useful results have been secured about the behaviour of the food and protective crops under experiment. Evidence is accumulating, for instance, that the main vegetable growing season in the uplands is from September to December. It should therefore be possible to increase the vegetable production of the Island by extending the greater utilization of the upland districts to such crops at the end of the winter when production in the other areas falls rapidly.

37. Richelieu Experiment Station, where most of the research work on tobacco is undertaken and much of the seed for planting the Colony's annual tobacco crop is raised, was opened to the public on the third and fourth July on the occasion of the Silver Jubilee Celebrations of the Tobacco Board.

PLANT PROTECTION

38. More attention, than formerly could be given, was paid during the year to diseases affecting crops other than sugar cane, which latter is now the responsibility of the Mauritius Sugar Industry Research Institute. Tea, tobacco, banana, the avocado, leeks, artichoke, beans, among others, were given attention. Trials with antibiotics were made in an effort to control the bacterial wilt of tomato, the cause of much annual loss.

39. From March 1957, all work on sugar cane insects has been taken over by the Mauritius Sugar Industry Research Institute, leaving the Department's division of Entomology free to concentrate on problems pertaining to the secondary crops, stored products and animal pests. Eleven shipments of an egg predator of the insect vector of Fiji disease of sugar cane were received from Hawaii. There is hope, from the work done on the biological control of the pests of the pigeon pea, that this valuable pulse may once again take its place in the local production of a rich vegetable protein food. A predator of the giant snail was introduced from Ceylon. Ten different species of parasites of fruit flies whose damaging effects have been on the increase, were introduced from Hawaii; it is hoped that mass introduction of these parasites will be possible in the next few months. Finally, a survey of the pests of tea and citrus was begun.

ANALYTICAL WORK

40. The Chemistry Division, apart from routine determinations for the public, has devoted considerable attention to analytical work for the other divisions of the Department, especially in regard to the nutritive value of maize silage, setaria and elephant grass, and the control of the pH value of experimental fish ponds. This aspect of the work was intensified and plans for modernising the laboratory were prepared. To that end, funds were sought for the transfer of the laboratory to the premises formerly occupied by the Sugarcane Research Station and a large order for modern equipment was placed overseas.

AGRICULTURAL ENGINEERING

41. Except for the Maize Mill and the Yeast Factory which continued in operation on the same basis as last year, the Agricultural Engineering Division remained temporarily unopened pending the resumption of duty of the Agricultural Engineer who has been on study leave in the United Kingdom since the latter part of 1955. The attempts made to recruit a Supernumerary Agricultural Engineer proved successful, in that the officer selected was due to arrive in Mauritius on 1st January 1958.

FRESH WATER FISHERIES

42. Experimental work on the acclimatisation and production of the four species of Tilapia introduced in recent years continued at the experiment stations of Pamplémousses, Richelieu and Curepipe. Results of production showed lower figures than in previous years owing partly to the alarming drop in the water level, as the consequence of drought conditions, and partly to the insufficiency of algae development. Experimental feeding of the fish with various species of grass was carried out without appreciable effect so far on the growth rate. Similarly, applications of fertilizers have not come up to expectations, especially in the uplands, and it would seem that fresh-water fish farming in Mauritius will prove more successful in the warmer regions of the Island.

RODRIGUES DEVELOPMENT

43. The development plan for Rodrigues aims at the completion of 3,500 unit family farms of 2 acres each, suitably contoured, canalised and dammed to effect adequate soil and water conservation and ensure maximum production of crops and livestock products. As the unit farms will be too small to supply the farmers with good replacement milk cows, six government breeding centres will be in operation for replacement purposes.

44. The scheme also provides for the development of 80 acres of irrigated rice lands, which should supply a considerable part of the island's rice requirements. An area of 600 acres of Government-planted economic forest in the upland area, supplemented by 300 acres of coastal plantations, should supply most of the fuel and timber needs.

45. Ridge cultivation with ties and strip cropping on the contour are the keys to the successful utilization of the steep lands which must be cultivated at Rodrigues. The ten demonstration plots laid down on such lines on badly eroded soil have proved immensely useful during 1957 in conveying to the Rodriguan peasant farmer the necessity of adopting the new methods.

46. By the end of the year, 320 unit farms laid out as above had been leased, four of the stock breeding centres were nearing completion, 8,000 fruit trees had been planted, including 5,372 mango trees, 27 cows and 2 bulls of the Creole milk breed had been imported from Mauritius, 40 weaners of a pure-bred Berkshire pigs imported from Australia had been sold for breeding purposes, and 10,000 lb. of clean locally grown rice had passed through the Agricultural Department's huller.

COMITÉ DE COLLABORATION AGRICOLE—MAURICE—LA RÉUNION—
MADAGASCAR

47. The activities of the Committee were maintained during the year, the receiving territory—La Reunion—providing the Chairman, the Directors of Agriculture in Mauritius and Madagascar acting as Vice-Chairmen.

48. The work of the Committee proceeded as in previous years, the emphasis being on the exchange of biological material and on short consultation tours by specialist officers of the three territories. Our Tea Officer visited La Réunion ; the Plant Pathologist and Entomologist of the Mauritius Sugar Industry Research Institute visited Madagascar in connection with the control measures against Fiji disease of sugar cane ; students from College of Agriculture visited Madagascar.

49. Mauritius received Mr. Breton, "Chef du Service Provincial de l'Agriculture de Tananarive", who studied our seed supply problem in regard to potato ; Professor Remy, of the University of Nancy, studied the meso-fauna of Mauritius soils ; Mr. Bossert, Chief Botanist of the "Institut de Recherches Scientifiques de Madagascar", investigated parts of our flora ; Mr. Tolza came from La Reunion to see our work on tea ; students of the Reunion School of Agriculture stayed a few days with ours at Réduit.

50. The Committee held its 7th annual meeting at St. Denis on the 13th November to draw up the programme of work for 1958 when Mauritius will be the receiving country.

VISITORS

51. The Department was honoured during the year by the visits of the following among many distinguished visitors : His Excellency the Governor, His Excellency the Officer Administering the Government, Mr. J. D. Profumo, O.B.E., Parliament Under Secretary of State for the Colonies, Mr. P. H. Hall, M.B.E., of the Colonial Office, the Honourable the Minister of Agriculture and Lands, the Honourable the Financial Secretary and the Honourable the Ministerial Secretary, the French Parliamentary Mission to La Reunion accompanied by Monsieur Le Préfet de la Réunion, Sir Thomas Dalling of the Animal Production Division of the Food and Agriculture Organisation of the United Nations, a Director of the British American Tobacco Company, Dr. H. D. Chapman, Professor of Soils and Plant Nutrition of the University of California, Professor Remy of the Faculty of Science of Nancy University, Dr. W. H. Kerr, Director of the Queensland Sugar Research Institute, Mr. Ronald Muir, C.M.G., Secretary of the Council of Australian Cane Growers' Association, Mr. J. J. Keigwin, M.B.E., Deputy Provincial Commissioner, Northern Rhodesia, Lady Sydney-Farrer, pedigree stock breeder, Kenya and Mr. B. G. Surridge, C. M. G., O. B. E. Adviser on Cooperation to the Secretary of State for the Colonies.

II. College of Agriculture

1. The College continued to offer a three-year course leading to the Diploma in Agriculture, an eighteen month-course for the Certificate in Sugar Analysis and a one-year course for the Certificate in Tropical Agriculture and cane Cultivation.

2. The posts of Assistant Lecturer in Sugar Technology and Lecturer in Agriculture were filled on 15th January, 1957 and 29th August, 1957 respectively. The teaching of applied subjects was undertaken by part-time lecturers, mainly officers of the Department of Agriculture and the Sugar Research Institute.

ENTRANCE EXAMINATIONS AND SCHOLARSHIPS

3. 33 candidates sat the entrance examinations for the Diploma course. Of these, 25 were successful and were admitted. There were also 10 candidates for the Sugar Analysis Course, 7 of whom were accepted and 25 for the Tropical Agriculture Course, all of whom were admitted. The three Government Scholarships of the value of Rs. 1,800 p.a. plus free tuition, were awarded to 2 new candidates and one 2nd year-student at the College.

STUDENT BODY

4. The number and distribution of students at the College is tabulated below :—

Course	1957	1956	1955
Diploma	59	52	34
Tropical Agriculture and Cane Cultivation ...	22	25	9
Sugar Analysis	7	7	7
Part-time	7	8	11
TOTAL NUMBER OF STUDENTS ...	95	92	61

5. Attendance at the Sugar Analysis Course, which was started in 1954, with the object of training personnel for sugar estate laboratory and for the Central Board, continues to be poor and the Advisory Board has had under review the desirability or otherwise of maintaining this course.

EXAMINATION RESULTS AND LAUREATESHIPS

6. The results of the annual examinations were as follows :—

	1957		1956	
	Sat	Passed	Sat	Passed
First Year, Diploma Course	26	18	17	14
Second Year, Diploma Course	14	13	10	10
Third Year, Diploma Course	10	8	7	7
Certificate in Tropical Agriculture and Cane Cultivation	22	14	—	5
Certificate in Sugar Analysis	3	2	—	4

7. Of the eight failures in the 1st year examinations, three are repeating the 1st year course, the rest being asked to leave. The one candidate who failed his second year examinations, left of his own accord. The two failures in the 3rd year examinations are repeating their 3rd year course.

8. All those who failed their Tropical Agriculture and Cane Cultivation examinations and the Sugar Analysis examinations left the College.

9. Mr. M. Perombelon who ranked first of the eight students who qualified for the diploma, passed with honours and was awarded a laureateship for university studies in the U.K.

EXAMINATION IN SUGAR MANUFACTURE OF THE CITY AND GUILDS OF LONDON INSTITUTE

10. This examination was taken in May by a number of diplomates of the College, with results as under :—

	1957	1956
Number of candidates	10	9
Number passed	8	9
First class honours	7	4
Second class honours	1	5

VISIT OF STUDENTS TO REUNION AND MADAGASCAR

11. Under the auspices of the Comité de Collaboration Agricole, the annual visit to Reunion was extended for the first time to Madagascar. A party of six third-year Diploma students accompanied by the Principal and the Lecturer in Agriculture flew to Madagascar. During a stay of two weeks as guests of the *Services Agricoles* of Madagascar, the party made a study-tour of the more salient agricultural activities in the island.

III. Central Board

The Board held 26 meetings during the year, as follows :—

- 3 meetings relative to assessment of sugar to planters ;
- 4 meetings relative to applications for changes of delimitation of factory areas ;
- 5 meetings relative to protests against assessment of sugar ;
- 3 meetings relative to closing down of weighbridges ;
- 11 meetings relative to general business.

CANE TESTING

2. The number of tests carried out during the year was 14,168 covering 322 individual planters or groups of planters supplying canes to 25 factories. The corresponding figures for the 1956 crop were 12,230 tests, 282 individual planters or groups of planters and 25 factories.

ASSESSMENT OF SUGAR

3. Following the publication of provisional assessment figures of sugar to planters for the 1956 crop, 21 Co-operative Societies, 1 Middleman and 14 planters lodged protests against the awards made by the Board. Three Co-operative Credit Societies and one planter withdrew their protests ; the other cases were heard by the Board and were all rejected.

COSTS OF PRODUCTION

4. Questionnaires were sent to 150 planters selected according to tonnage of canes, and to the 26 millers. With a few exceptions, all the questionnaires were returned duly answered. Planters and Millers' costs of production for the 1956 crop were worked out.

TRANSPORT COSTS

5. Before the start of the 1957 crop, a schedule showing the maximum rate claimable by millers for the transport of planters' canes from various weighbridges to the factories were issued for the information of the parties interested.

6. The formulae adopted for the computation of the schedule in respect of the 1957 crop were :—

$$C = \text{Rs } (2.30 + .20 \times m) \text{ for road transport}$$

$$C = \text{Rs } (2.35 + .50 \times m) \text{ for rail transport}$$

Where C is cost of transport per ton cane, and m the number of miles over which transport is effected.

DELIMITATION OF FACTORY AREAS

7. 18 applications for changes of delimitation of factory areas were received by the Board. In four cases the requests were granted.

PERMITS TO MIDDLEMEN

8. 60 permits were delivered to Middlemen for the 1957 crop. One permit was not renewed on account of the Middleman's unsatisfactory dealing with his planters.

COMPLAINTS AGAINST MIDDLEMEN

9. The total number of complaints against middlemen amounted to 57 in 1957. The majority of these were against the middleman whose permit was not renewed. In the other cases, planters and middlemen reached amicable agreements.

CANE CONTRACTS

10. 10,764 cane contracts were registered. The total number of contracts in force for the 1957 crop was 12,940 of which 12,660 referring to 18,476 planters were on a provisional basis. The total number of planters was 18,740.

BREACH OF SALE OF CANES (CONTROL) ORDINANCE

11. 11 cases of breach of the Sale of Canes (Control) Ordinance 1941, were reported to the Police, and prosecutions started against the offenders. The number of planters who fail to enter into contracts with millers prior to the 30th of June is still large and totalled 143 in 1957. As usual, the grounds for not entering into contracts within the stated time were illness or forgetfulness.

CANE VARIETIES

12. No change has been brought to the list of varieties authorised by proclamation under the Sugar Cane Plantations (Control) Ordinance, and accordingly Proclamation No. 5 of 1956 is still in force.

The cane varieties at present approved for planting are :—

M 134/32 (together with its white and striped spots), M 112/34, Ebene 1/37, BH 12/12, B 3337, B 37161, B 37172, M 147/44, B 34104, M 31/45.

CONTROL OF CANE WEIGHBRIDGES

13. A total of 145 weighbridges were in operation, as compared with 149 in 1956, four having been closed with the Board's approval. Of these 145 weighbridges, 135 were found accurate on first examination. Ten had to be re-examined. None was condemned.

3 obsolete weighing machines were replaced by new ones prior to the 1957 crop.

SURPRISE CHECKS CARRIED OUT AT WEIGHBRIDGES DURING THE CROP

14. 204 surprise checks were carried out; 187 vehicles were re-weighed (80 carts and 107 lorries). In 5 cases the weights were found to be inaccurate and the weighers were prosecuted. In addition, 14 warnings were given to weighers for inaccurate weighing.

IV. Tea Industry

The Tea Committee—an advisory body appointed under the provisions of the Tea Industry Control Ordinance, 1949, met on ten occasions during the year.

2. An ordinance, and connected regulations framed to achieve the establishment of a Tea Control Board vested with administrative and technical controlling powers over the developing industry and able, as a result, to establish a subsidiary central marketing organisation, was drafted, studied and submitted for adoption. The draft Regulations consolidate and, to a great extent, rationalise and modify all existing enactments.

FACTORIES

3. Expansion of existing manufacturing capacity was largely confined to the La Flora Estate factory. This factory completed extensions to sorting and rolling rooms and construction of a new leaf picking structure. A six-foot drier and certain new machinery was installed and the company is now engaged upon the further installation of drum wither units and rolling machinery.

4. All existing factories worked somewhat over capacity owing to unexpectedly heavy yields during the main flushing period and this circumstance prevented achievement of any very significant improvement in quality in respect of the bulk of the crop.

5. It is anticipated that a new Government-sponsored factory with an initial annual capacity of around 750,000 pounds of made tea will be in operation in the second half of 1958 for the purpose of absorbing surplus leaf and relieving the current strain on existing processing facilities.

MANUFACTURE—GENERAL

6. With the relatively high cost of production prevailing in Mauritius and with a threat of over-production of common teas throughout the world, it became clear during the year that material improvement in the quality of Mauritian teas was a matter of urgency and of great importance to the industry. Restrictions imposed upon plucking standards in the latter half of the year have brought about considerable improvements, and certain estates are gradually adopting the use of baskets for plucking and leaf transport. With an increase in factory capacity as envisaged above and a consequent lessening of pressure on established factories, it is hoped that it will in course of time prove to be possible for quality teas to be produced.

DEVELOPMENT PROJECT

7. By the end of the year, numerous initial difficulties had been resolved and progress in implementation of the new Development Project was being achieved. Some 1,045 acres of new land had been cleared and of this area about 670 acres had been planted with seed at stake. Towards the end of the year, exceptionally severe drought conditions prejudiced growth and some losses were sustained, but overall results were generally satisfactory and lands cleared to date appear to be eminently suitable.

8. Some 6,955 pounds of tea seed of approved varieties were imported to supplement seed supplies obtained from local sources and, as was the case last year, much of this was stored in cold storage accommodation for considerable periods and issued as and when required.

GOVERNMENT TEA PROPERTIES

9. *Wooton Tea Experimental Station*.—No new clearing or planting was carried out during the year and the area of the station under tea remained at about 70 acres. Despite unavoidably late pruning which prejudiced yields, several of the more advanced areas produced in excess of 4,000 pounds of green leaf to the acre. The average in bearing was 59.01 acres and this produced an overall average yield of 3,064 pounds per acre, but the greater part of this plucking area is still very young and immature. Larger scale vegetative propagation was carried out and certain small-scale rough trials of fertilisers and weedicides were continued throughout the year. A considerable number of peasant growers visited the station during the year and received elementary instruction.

10. *Midlands Estate*.—No enlargement of this estate was carried out; normal routine maintenance and development constituted the principal work performed. Consequent upon unavoidable late pruning, and the young stage of most plantations, the overall crop average was low and amounted to 1,474 pounds per acre. One field, No. 4, yielded 1,900 pounds of green leaf per acre in its third year from seed, which is considered to be satisfactory. An intensive infilling programme was carried out, covering 53 acres in all. A good crop of *Tephrosia Candida* seed was harvested.

11. *Seed Bearers*.—The Government's seed garden at Parc-aux-Cerfs yielded 9,677 pounds of good quality seed. The Midlands seed garden crop increased from 965 pounds in 1956 to 8,200 pounds in 1957, and a small initial yield was obtained from rested bushes in the plucking area of the estate. The 12-acre new seed garden at Nouvelle Découverte was planted with Betjan variety obtained from the Botanical Gardens, Entebbe. Germination was poor and a great deal of selective infilling remains to be done. A further 18 acres of land at Crown Land Salazie in Nouvelle Découverte was cleared and prepared for development as a seed garden of Mabira strain. Some six acres had been planted by the end of the year.

PRODUCTION

12. Tea production in the Colony amounted to approximately 1,893,752 pounds of black tea and 663 pounds of green tea. This represents an increase of more than 350,000 pounds of black tea over the previous year and is largely attributable to the maturing of new tea areas. Green tea production is of no economic significance in the Colony and is gradually declining. The production of the five factories during the last five years in English lb. was as follows :—

	1953	1954	1955	1956	1957
Bois Chéri... ..	417,558	577,883	634,780	694,399	906,248
La Flora	132,377	160,838	246,832	319,022	424,381
Corson	274,922	298,898	317,014	345,444	327,740
Pont Colville	67,786	71,621	104,657	139,465.7	150,273
Nouvelle France	15,161	33,747	36,743	39,264.5	85,110
TOTAL	907,804	1,142,987	1,340,026	1,537,595.2	1,893,752
R. Aubeeluck (Green Tea)	1,473	1,643	1,822	697	663

ACREAGE

13. The acreage under tea is shown below :—

	1957	1956
Total arpents	3,430	2,790
Arpents in bearing	2,485	2,380

YIELDS

14. Overall yield of manufactured tea per bearing arpent was approximately 761 pounds as compared with 646 in 1956 and 664 in 1955. This is a continuation of the general steady increase in yields in recent years.

15. Exports and Imports :—

Year	English lb	
	Exports	Imports
1952	16,035	94,822
1953	76,755	111,878
1954	249,673	36,080
1955	374,217	35,076
1956	335,365	21,335
1957	969,214	19,411

16. Exports were consigned to :—

		English lb	
		1957	1956
United Kingdom	...	914,690	301,728
South Africa	...	48,217	19,989
Holland	...	3,300	9,475
Madagascar	...	90	3,069
Réunion	...	2,453	1,102
Australia	...	8	2
British West Indies	...	350	—
France	...	2	—
Italy	...	4	—
Kenya	...	100	—

17. Imports came from :—

		English lb.	
		1957	1956
Ceylon	...	11,665	12,898
Hong Kong	...	4,475	5,810
China	...	3,115	2,579
United Kingdom	...	101	48
India	...	51	—
Uganda	...	4	—

V. Fibre Industry

PRICES

During 1957, the prices of fibre continued to be governed by the agreement between Fibre Producers, the Sack Factory and Sugar Millers, whereby the price of local sacks and of locally produced fibre are related to that of imported sacks, subject to a maximum fluctuation of 10 per cent between successive years. Since 1954, an annual reduction of price of 10 per cent has been applicable. In 1957, however, in order to stimulate fibre production, the Board of the Government Sack Factory decided to maintain the prices of fibre at approximately the same level as in 1956, although a full 10 per cent reduction was applicable.

2. First grade brushed :—

		Price per metric ton			
		1954	1955	1956	1957
		Rs.	Rs.	Rs.	Rs.
First grade brushed fibre	...	1,272	1,145	1,031	1,030

FIBRE PRODUCTION

3. Comparative statistics in regard to the fibre industry are tabulated below :—

		1954	1955	1956	1957
Factories operating	No. ...	36	30	23	22
Wild Aloe Fibre	arpents ...	14,603	9,518	9,334	—
Planted Aloe Fibre	arpents ...	2,521	1,784	1,916	—
Planted Sisal	arpents ...	625	377	255	—
Aloe Fibre produced	m. tons ...	1,972	1,652	1,513	1,725
Sisal Fibre produced	m. tons ...	7	70	—	40
Local sales	m. tons fibre ...	1,882	1,593	1,415	1,793
Exports	m. tons fibre ...	58	186	98	—
Value of local sales	Rs. ...	2,247,593	1,766,600	1,407,000	1,748,800
Value of exports, f.o.b.	Rs. ...	25,000	100,000	50,000	—

4. It is apparent that the decision of the Board of the Government Sack Factory to maintain prices in order to stimulate production has had the desired effect as the 1957 production was higher than that of the previous year by 18 per cent.

SACK FACTORY

5. Figures in regard to the working of the Government Sack Factory are :—

	1954	1955	1956	1957
Fibre processed, metric tons ...	2,187	2,905	1,521	1,797
Sacks produced (80 kilos cap.) ...	2,249,000	2,687,000	1,401,000	1,657,000
Filter press cloth, yards ...	40,000	64,000	12,000	15,000
Other fabrics, yards ...	4,500	5,700	2,200	5,700
Yarn for rope, kilos ...	15,900	8,400	16,800	10,600

6. As from early in 1955 a heavier sack was produced, explaining the apparent discrepancy in the relation between weight of fibre produced and number of sacks produced annually.

7. The Sack Factory (Amendment) Ordinance 1957 made provisions which have changed the financial situation of the factory much to its benefit. Interest bearing Agreement loans have been consolidated into an interest-free loan of Rs. 5,350,000 repayable at the end of 30 years beginning on the 1st January, 1957 by annual payments into a Sinking Fund. This has been the main factor in turning the net loss of the factory of Rs 174,000 for the year 1956 into a net profit of Rs 40,000 for the year 1957.

8. The prospects of the industry have been further improved by the replacement of the old Tripartite Agreement by a new agreement on more favourable terms for the fibre producers and the Government Sack Factory. The new agreement which begins to operate on the 1st January, 1958 is for a period of three years.

VI. Tobacco Industry

Production was limited to the estimated requirements for domestic leaf of the British American Tobacco Co. (Mauritius) Ltd. and to meet a small order for 58,250 kilos of air-cured Amarello (Burley) for export to Europe.

CROP CONDITIONS

2. Weather conditions were favourable for the early planted Virginian varieties with the result that both yield and quality were much better than in the preceding year. Drought in the later part of the year adversely affected the yield of Amarello. Air-cured Amarello, which is planted last, suffered much more severely than the flue-cured Amarello. Diseases except *Alternaria* Brown Spot and Root-knot were not serious.

ISSUE OF PERMITS

3. Reduction of the accumulated manufacturer's stocks enabled production to be increased in 1957. The table below compares the issue of permits with that of the previous year :—

			1956		1957	
			<i>Arpents</i>	<i>Kilos</i>	<i>Arpents</i>	<i>Kilos</i>
Flue-cured Amarello	...	...	168	145,000	96	85,000
Flue-cured Virginian	...	...	419	135,000	522	190,000
Air-cured Amarello	...	...	103	90,000	178	156,500
MAURITIUS—TOTAL	...	...	690	370,000	796	431,500
RODRIGUES—A. C. AMARELLO	...	...	—	200	—	—
TOTAL PERMITS	...	...		370,200		431,500

4. The allocation of 156,500 Kg of air-cured Amarello includes the quota of 58,250 kilos for export. As may be observed from the above, the Tobacco Board has considerably increased the allocation of flue-cured Virginia in pursuance of its policy of improvement of the quality of domestic tobacco so as to enable it to compete with imports of Virginian cigarettes and leaf tobacco. The larger acreage allocated for tobacco production (796 arpents as compared with 690 last year and 490 in 1955) is mainly a reflection of the increased proportion of Virginian types with their lower yields per acre.

PRODUCTION

5. Actual production is shown below, again with last year's figures for purposes of comparison :—

			1956		1957	
			<i>Arpents</i>	<i>Kilos</i>	<i>Arpents</i>	<i>Kilos</i>
Flue-cured Amarello	...	...	168	149,658	96	82,257
Flue-cured Virginia	...	...	419	162,328	522	221,737
Air-cured Amarello	...	...	102	92,619	178	130,319
MAURITIUS—TOTAL	...	...	689	404,605	796	438,313

6. No tobacco leaf was received from Rodrigues in 1956 and 1957. Over-quota production, at 6,813 kilos, was very small compared with last year's figure of 34,405 kilos.

YIELDS AND RETURNS

7. Yields per acre and financial returns to growers were :—

Average Yield per Arpent :—

				1956	1957
				<i>kilos</i>	<i>kilos</i>
Flue-cured Virginia	...	...	...	387.2	426.6
Flue-cured Amarello	...	...	...	889.1	855.9
Air-cured Amarello	...	...	...	912.0	754.4

Average Return per Arpent :—

				<i>Rupees</i>	<i>Rupees</i>
Flue-cured Virginia	..	...	...	2,166.16	2,551.28
Flue-cured Amarello	...	...	...	4,219.87	4,197.37
Air-cured Amarello	...	...	...	2,225.23	1,866.31

Average Value per kilo of leaf :—

				<i>Rupees</i>	<i>Rupees</i>
Flue-cured Virginia	...	...	...	5.59	6.01
Flue-cured Amarello	...	...	...	4.75	4.90
Air-cured Amarello	...	...	...	2.44	2.47

QUALITY

8. The drought which prevailed at the end of the year gave lower yields of Amarello, but a higher proportion of bright leaf.

<i>Percentage of bright and medium grades</i>				1954	1955	1956	1957
Flue-cured	...	...	...	50	70	69	73
Air-cured	...	...	...	10	15	16	21

LOCAL MANUFACTURE

9. The manufacturers' purchases and usings of domestic and imported leaf are shown below :—

				<i>Kilos Domestic</i>	<i>Kilos Imported</i>	<i>Kilos Total</i>	<i>Imported % Total</i>	<i>Value per kilo</i>	
								<i>Imported C.I.F.</i>	<i>Domestic</i>
								<i>Rs. c.</i>	<i>Rs. c.</i>
1956	...	Purchases	...	389,559	116,385	505,944	23.0	9.48	5.86
1956	...	Usings	...	417,522	123,495	541,017	22.8	—	—
1957	...	Purchases	...	390,464	68,797	459,261	15.0	9.85	5.73
1957	...	Usings	...	453,302	104,999	558,301	18.8	—	—

10. The percentage of imported leaf used in manufacture of local cigarettes has shown a drop for the third year in succession, the figures being 27.2 in 1954, 26.2 in 1955, 22.8 in 1956 and 18.8 in 1957. This reduction in the use of imported leaf, to the advantage of domestic leaf, is a result of the Tobacco Board's policy of encouraging the production of better quality Virginian leaf capable of replacing present imports.

11. The comparison of the values of imported and domestic leaf purchased by the sole manufacturer, however, is not strictly valid as the imports consist only of Virginian leaf, whereas the domestic purchases include Amarello. The average C.I.F. value of Rs. 9.85 for imported Virginian leaf compared with Rs. 7.34 per kilo for domestic Virginian. The average values of Amarello flue-cured and air-cured purchased by the manufacturer were Rs. 5.10 and Rs. 3.26 per kilo respectively. Domestic Virginian, blended with imported leaf, is used in the manufacture of the "Embassy" brand of local cigarettes which sells in competition with imported Virginian cigarettes. Amarello leaf, and some of the lower grades of domestic Virginian, are utilised for the cheaper brands, selling below the price range of imported cigarettes.

IMPORTS

12. Imports of unmanufactured leaf and cigarettes for the last two years are tabulated below :—

		<i>1956</i>		<i>1957</i>	
		<i>Kilos</i>	<i>Value Rs.</i>	<i>Kilos</i>	<i>Value Rs.</i>
Cigarettes	...	74,262	1,332,540	86,011	1,558,322
Leaf—Rhodesia	...	68,226	657,451	52,753	248,254
Leaf—U.S.A.	...	48,159	446,496	43,044	429,748
TOTAL LEAF	...	116,385	1,103,947	68,797	678,002
GRAND TOTAL	...	190,647	2,436,487	154,808	2,236,324

13. Although a significant part of the imports of Virginian leaf have this year been replaced by local production, there exists room for expansion of the local industry through providing a greater part of the manufacturers' requirements of good quality Virginian leaf. It is also evident from the above figures that there is considerable scope for gaining that part of the local market which is held by imported cigarettes. In consequence, the Tobacco Board has had under urgent consideration during the year the problem of protecting the local industry against extensive importation of cheap brands of Virginian cigarettes and pursues its policy of encouraging the production of good quality Virginian leaf suitable for replacing part of the present imports of unmanufactured Rhodesian and American leaf.

EXPORTS

14. 57,950 kilos of air-cured Amarello (Burley) was produced for export : of that amount 3,187 kilos had been shipped by the end of the year. There were no exports in 1956 and one small consignment of 5,879 kilos to the United Kingdom in 1955. It is anticipated that slightly more will be exported in 1958.

15. Prospects of a regular export market remain discouraging. Owing to the small size of the industry and the high cost of production, it is unlikely that, under present conditions, Mauritius can offer Virginian tobacco in quantities or at prices that would interest leaf merchants. Demand for Amarello type leaf is very limited, although it is probable that occasional small orders for air-cured (Burley) will continue. Even here, however, export is hardly an economic proposition, as such orders are for specific grades and not for the "run-of-the-crop." Nevertheless, for the sake of continuing export connections which may later be of benefit should circumstances change, the Tobacco Board will endeavour to meet all export orders and, for this purpose, is considering the possibility of building up reserve stocks of air-cured leaf.

MR. BYLES' VISIT

16. The visit of Mr. D. V. Byles, an expert in the production of leaf tobacco of the British American Tobacco Co. Ltd., seems to have had some immediate effect on the improvement of the quality of the 1957 crop. It may be expected, as time goes on, that his recommendations will be more fully implemented by growers.

VII. Crop Extension Services

FOOD CROPS

The following are tables showing the area cultivated to foodcrops and the annual production of the various locally grown commodities worked out from estimated yields :—

	Maize	Manioc	Aronilles	Sweet Potatoes	Ground Nuts	Irish Potatoes	Beans and Peas	Pineapple	Brynal	Tomatoes	Ginger	Creechers	Mixed Vegetables	Total
1956	...	2,405	272	168	344	933	—	—	—	—	—	—	—	—
1957	...	1,597	305	183	1,052	571	436	26	141	993	93	485	1,449	7,676
ESTIMATED AVERAGE YIELD (KILOS PER ARPENT)														
1956	...	600	4,300	3,500	950	3,200	—	—	—	—	—	—	—	—
1957	...	600	4,000	3,000	960	4,400	1,000	5,000	10,000	5,000	10,000	20,000	10,000	—
ESTIMATED TOTAL PRODUCTION (METRIC TONS)														
1956	...	1,450	1,632	722	380	2,986	—	—	—	—	—	—	—	—
1957	...	958	1,403	732	1,010	2,512	436	130	1,410	4,965	930	9,700	14,490	39,711

2. From the above it will be observed that maize cultivation has been short by some 800 arpents and Irish potatoes by over 350 arpents in 1957 as compared to 1956. A slight increase in the area under cultivation has, however, been observed with manioc, sweet potatoes and groundnuts. On the whole, the acreage grown to field crops has been approximately the same for 1956 and 1957. This does not mean that sugarcane is no longer displacing other food crops, but new lands are being cleaned and a greater effort is being made to grow food crops in the interlines of plant cane.

3. In 1957 records have been taken for crops of mixed vegetables, peas, beans, tomatoes, ginger and others. These records were not kept previously. It is thought that they will give in future a more accurate picture of the various food crops grown in Mauritius.

EXTENSION WORK

4. *Visit to Planters.*—Following the policy of bringing improved agricultural knowledge to farmers, the Extension Service staff has made some 8,400 visits to farmers in the course of the year. This figure includes both vegetable and sugarcane growers.

DEMONSTRATION ON USE OF FERTILIZERS

5. In addition to visits where advice and practical demonstrations are given, demonstration plots are also laid out on the farmers' lands for the purpose of showing the results which can be expected if the advice given is followed. 132 such plots were laid out or attended to during the year. They comprised 52 fertilizer demonstrations on sugarcane and 88 demonstration plots on other crops.

6. Marked results were obtained. With sugarcane an average increase in yield per acre of 7.3 tons in the North, 5.8 in the East, 9.0 in the South and 4.0 tons in the West were recorded. The increase over the whole island averaged 7.4 tons per arpent. There was no case where an increase in yield has not been recorded following the use of complete fertilizers. These considerable increases in yields are serving as a highly convincing means of propaganda among small cane growers who are rapidly coming over to the use of complete fertilizers instead of their previous practice of relying mainly on sulphate of ammonia.

7. With crops other than cane similar successes are being achieved. Increases in yield varying from 25 to over 50 per cent have been recorded with groundnuts, tomatoes, potatoes and beans.

SUGARCANE PROPAGATION AND DISTRIBUTION

8. The propagation for distribution to growers of the newly released varieties: M 147/44, M 31/45, B 34104, B 37161 and B 37171 has been a feature of the activities of the Extension Service officers. 35 small demonstration plots varying in size from 10 to 25 perches were planted with material produced mainly from Richelieu Experimental Station. As many plots planted the year before were reaped, and the produce sold to small planters for new plantations. About 100,000 canes of the abovementioned varieties were thus produced and distributed by the Extension Service.

9. Sales of canes for planting from planter to planter were also organised by the Service, several hundred thousand cuttings being thus supplied. In spite of these efforts the supply fell short of the demand and a large number of planters have yet to be served.

10. The rapid introduction of new varieties and the more widespread use of complete fertilizers in the small planters sugarcane system of agriculture are contributing towards a rapid improvement in cane and sugar production in this section of the Sugar Industry. It is perhaps too early yet to assess the impact of these changes on the actual production, but judging from what is now observed, it is permissible to predict that in the next 5 years the small planters' sugar production will have increased by 50 per cent or more. Lands long abandoned as unproductive for lack of fertility are now being brought back under cultivation upon the results demonstrated.

PLANTERS' CANE SEED PRODUCING STATION

11. The planting of suitable varieties and the use of balanced fertilizers can only bring good returns if the planting material used is healthy. Some good planters use good planting material, but this is not yet the case among the majority of small planters.

12. It is largely through lack of organization that the small planters could not take advantage of the newly released varieties for commercial planting as compared with the larger sugarcane growers. In view of this, the Sugar Planters' Rehabilitation Fund has agreed to run for the benefit of small planters a sugarcane nursery from which sound cuttings would be produced and where rapid multiplication of new varieties would be made for sale to small planters. Provision is made in the scheme to supply cane seed material at half price to sugarcane planters who would not have had an opportunity of receiving direct cash assistance from the Rehabilitation Fund. The nursery will be run in close co-operation with the Department of Agriculture and the Mauritius Sugar Industry Research Institute and is expected to be in operation by next year.

FOLIAR DIAGNOSIS OF SUGARCANE

13. 1,428 samples of sugarcane leaves for foliar diagnosis were taken from 476 fields. Numerous cases of P and K deficiencies were disclosed and necessary corrections in the fertilizer applications were made. Increases varying from $2\frac{1}{2}$ to 11 tons were observed this year in fields sampled in 1956 where adequate fertilizers had been applied to correct the deficiency. As a whole, the results of the foliar diagnosis show the generally low status of fertility of the lands of the smaller sugarcane growers resulting from phosphate and potassium deficiencies.

PEST, DISEASE AND WEED CONTROL

14. Active assistance was given to farmers in the control of pests and diseases by means of practical demonstrations. Some 300 such demonstrations were conducted on the control of potato and tomato blight, red spiders, aphids, mealy bugs, onion thrips, and bean and fruit flies. The greatest success recorded was on the bean fly which can now be very efficiently controlled by the use of aldrin in the early stages of growth. Success has also been obtained by the use of aldrin against the cucurbitaceous flies.

15. Large scale treatment against pests and diseases is now observed as a routine practice in many regions and the equipment is often privately owned. Some 15 demonstrations were also conducted on the use of chemical herbicides.

EVENING TALKS AND FARMER'S MEETINGS

16. One hundred and five meetings were held with planters in the various villages. In the course of these meetings, lectures are given on the ways and means of improving the planters' traditional system which is now out of pace with intensive methods of farming. These lectures constitute a needful complement to the practical demonstration work conducted in the fields. Lantern slides made locally on various crops and film strips are shown to illustrate the improved methods recommended. An average of 40 planters attend these meetings not counting the crowd of idlers that usually gather when cine films or lantern slides are shown.

PERMANENT DISTRICT DEMONSTRATION PLOTS

17.—(i) *Arsenal Demonstration Plot*.—This plot was run for the last year jointly with the Village Council of the locality. The Department of Agriculture is resuming sole control of the plot on 1st January, 1958. It is proposed to create the Agricultural District Headquarters for Pamplémousses District on the site.

(ii) *Vacoas Demonstration Plot*.—This plot has been run as usual in co-operation with the Ramakrishna Mission. It is also proposed to erect here the sub-station which will serve as District Headquarters for Plaines Wilhems.

Both plots have produced a wide range of vegetables of a total value of Rs. 11,500.

18. A good start was made during this year with the preliminary works and constructions of two new sub-stations at Mapou in the North and at Rivière des Anguilles in the South. Both will be ready to operate early in 1958.

19. At the request of the Civil Commissioner for Black River and Plaines Wilhems a demonstration plot of approximately one arpent in extent was started at Tamarin. The plot is entirely run by the Village Council of the locality, the Department of Agriculture's contribution being to provide the necessary guidance.

20. Similar plots run at Bambous (Black River) and Long Mountain have been kept under intensive production and have given enough food for thought to the inhabitants of the locality. The plot at Long Mountain has been a source of inspiration to many inhabitants of the Long Mountain Housing Estate.

21. At l'Escalier in the South a demonstration plot was also started on the ground of the Social Welfare Centre. This garden is run by the Youth Club of this locality. Advice is regularly given on vegetable gardening at the Calebasse and the Pamplémousses Infirmarys.

VEGETABLE CLUBS

22. The running of a vegetable club was given a trial in a rural area of the South at the small village of Bois Chéri where almost no vegetables are produced either on a domestic or a commercial scale. The results have been beyond expectation. Cabbage, khol rabi, carrots, beans, potatoes and other lesser vegetables have been grown with success. The use of insecticides and fungicides was demonstrated whenever their application was required. Thus 16 gardens were got under way and several other inhabitants are proposing to follow suit.

AGRICULTURAL TEACHING TO PRIMARY SCHOOL STAFF AND PUPILS

23. Generally, staff and pupils of Primary Schools show great interest in gardening classes. This is reflected by the condition of most school gardens which are in the great majority of cases maintained at a high standard. One thousand five hundred and seventy visits were paid to school gardens during the year by the Extension Service Staff.

SOIL EROSION

24. It is generally thought, incorrectly, that cane lands do not suffer from soil erosion owing to the natural good protection that the sugarcane crop provides. It has, however, been observed that the practice of digging furrows down the slope on rolling grounds was conducive to heavy losses of soil during the 3-4 months period immediately following the planting of the cane crop when the bare soil is exposed. Thin and stunted crops are the result. The attention of farmers is now being seriously drawn to that faulty practice. Contour planting of sugarcane is advised on all sloping grounds as a means not only of combating erosion but also of retaining rain water as well as preventing fertilizer loss, both of which run off furrows dug along the slope of the land.

25. Practical demonstrations over some 40 acres of land belonging to some 34 different growers were conducted during the year. The crop now growing on these lands is showing a remarkable stand and the heavy downpours of rain which have occurred at the time of writing have shown the satisfactory results obtained. Planters are often taken to visit these works.

RADIO TALKS

26. Monthly talks arranged by the Extension Service were made on the radio with the collaboration of officers of the Department of Agriculture and of the Sugar Industry Research Institute. Contact is thus established with a much larger audience than is possible by individual visits, the number of large and small farmers in the Colony amounting to over 20,000.

SUB-STANDARD CINEMA

27. In collaboration with the Visual Education Officer of the Department of Education, cine film work is in progress. A colour film on the soil and water conservation works at Rodrigues has been made and is now in England for processing. A second film black and white on activities of the Women's Vegetable Club is also in preparation. A number of films of agricultural interest have been received and are shown in the districts by the Extension Service staff in the course of evening meetings.

VIII. Livestock**ARTIFICIAL INSEMINATION CENTRE, REDUIT**

1. The renovation and modernisation of the Centre begun the previous year, was completed. The roofs of the byres require repairs, which will be carried out during the next financial year. As the Centre also has on its grounds the quarantine kennels, the entire station was fenced in to provide adequate control and isolation. A modern incinerator for the disposal of refuse, a metalled approach road with a disinfection dip were also constructed as a measure of disease control in times of emergency. One of the staff quarters on the Station was renovated to house a Livestock Assistant for proper supervision and management of the stock at all times. To breed our own stock of laboratory animals, rabbit and guinea pig hutches and a brooder house and run were constructed.

2. The Station now houses 12 bulls, four dams of known milk potential and the number will be increased to 14 as more bulls mature at the Palmar Breeding Station. Recording of statistical data essential to assess the performance of these bulls was initiated during the year while the Artificial Insemination Laboratory and the technique of collection, preparation and use of semen in the field was improved.

3. During the year the offices of the Senior Veterinary Officer, the Veterinary Officers, the Animal Husbandry Officer and other staff were shifted to the Centre to centralise the Division's head-quarters.

LIVESTOCK EXTENSION SERVICE

4. The Staff of the Extension Service was increased during the year by the appointment of three stock inspectors and four livestock assistants, two new sub-offices being also opened. This increase has enabled the Division to extend its activities to all parts of Mauritius.

5. With increasing livestock activities in Rodrigues, the transfer of one of the stock inspectors to the Dependency was approved. This will be the first time that an officer of the Livestock Division has been posted outside Mauritius.

6. The following is a summary of the Extension Service activities during the year under report :—

Artificial Insemination	8,292
Digestive Disorders	649
Calcium and Phosphorus deficiency	886
Enucleation of ovarian cysts	522
Mastitis	242
Dystokia	316
Assessment for Pregnancy	1,177
Miscellaneous cases	484

7. In December a new feature was added to the Extension Service activities by holding a series of lectures and demonstrations on management and feeding to pig owners at the Village Council hall in Roche Bois. This work will be extended to other parts and in addition lectures will cover cattle and poultry management. Models of cow and poultry houses are being prepared and the local office of the British Council has arranged to supply documentary films on these subjects for demonstration to breeders.

VETERINARY LABORATORY

8. In spite of limited accommodation, a fully equipped veterinary laboratory was set up in the month of November. The laboratory comprises pathological and biological sections and has enabled the division to initiate investigations into bovine, avian and canine diseases.

9. The first batch of Newcastle disease vaccine was issued within six weeks of the establishment of the laboratory and this vaccine is now prepared regularly at weekly intervals for issue to poultry keepers in the Colony. Before the end of the year work on the preparation of Fowl Pox vaccine, hitherto imported from South Africa, was taken in hand. Work was also initiated on the preparation of inactivated formalised Newcastle disease vaccine for use on day old chicks. During the year 207,000 doses of Newcastle disease vaccine were prepared, partly at the Bacteriological Laboratory of the Department of Medical and Health Services and the rest in the newly set up Veterinary Laboratory and issued to poultry keepers in Mauritius.

10. Over 200 post-mortems were carried out during the year on poultry, dogs, cats, rabbits and goats at the request of the Police Department and members of the public to identify the cause of death.

ANIMAL DISEASES

11. *Tuberculosis*.—During the year, 2,508 herd cattle (almost the entire herd cattle population) and 455 dairy cattle were tuberculin tested. Reactors totalling 16 per cent and 3 per cent respectively were destroyed through slaughter. In addition, with the cooperation of stock breeders, the infected areas on various sugar estates were disinfected and isolated.

12. *Deficiency Diseases*.—As in previous years, the main diseases affecting milch cattle have been deficiency diseases arising out of malnutrition. 886 cases of calcium and phosphorus deficiency were successfully treated, while over two hundred were too advanced to respond to treatment and the animals had to be slaughtered. In an attempt to combat such deficiency diseases, work was initiated to prepare a cheap and balanced ration for milch cattle composed of protein and carbohydrates from locally produced sources, together with minerals and vitamins.

13. *Poultry Diseases*.—Both Newcastle Disease and Fowl Pox were kept under control through the regular use of vaccine.

LIVESTOCK BREEDING STATION, PALMAR

14. The objects of this Station are to produce and rear Creole milch cattle in conjunction with the Government Dairy, production of progeny-tested sires for use in the Artificial Insemination Service, and to provide male breeding stock of suitable beef breeds and of goats.

The main work during the year has been the building up of the Creole milk herd through purchase, and the modernisation of existing buildings. Sixty-one cows and heifers were purchased and early results with them appear promising.

Building work included a complete new set of labourers' quarters, a new goat shed, a night shelter for the Ongole cattle, renovation of two cowsheds and the installation of a weighbridge. In addition about 12 acres of grazing land were fenced and divided into paddocks.

15. The disease picture has been very satisfactory. The milch and herd cattle were tested against tuberculosis and contagious abortion and the few T. B. reactors were destroyed by slaughter. There were a few deaths among the goats from suspected Salmonellosis.

16. During the year thirteen bulls, bull-calves, cows and heifers of the Ongole breed and two Anglo-Nubian goats were sold by auction to stock breeders to help improve their stock.

GOVERNMENT DAIRY

17. Progress has been made on a large capital expenditure programme entailing complete renovation and modernisation of the Government Dairy at Curepipe. When in full swing the Dairy will accommodate 100 milking cows and a number of young stock. The main works completed during the year include :—

- (a) A new cowshed for 56 cows and renovation of existing sheds for a further 46 cows.
- (b) New bull pens with exercising yards.
- (c) A block of young stock pens.
- (d) Milk rooms and offices.
- (e) Food and fodder stores.
- (f) A block of four calving pens.
- (g) Loading ramp.
- (h) Covered passages connecting the main buildings.

18. Stocking of the Dairy was started at the end of July and at the end of the year 44 Creole cattle were installed. The milk is sold by tender to a contractor who undertakes distribution. Fodder and litter were, by the end of the year, being completely supplied by the adjacent Curepipe Experimental Station operated by the Agricultural Division.

ANNUAL RECORD OF MILK YIELDS

19. The following is a summary of the record of milk production of the Creole animals at the various Government Stations :—

Average number of cows in milk : 38.

	Kgs.	Pounds	Gallons
Total milk produced	96,998	213,397.8	21,339.8
Average Production per cow in milk per year ...	2,553	5,616.6	561.6
Average daily production per cow in milk ...	6.6	14.52	1.45

LIVESTOCK FOR RODRIGUES

20. To help improve the stock at Rodrigues, as part of the Dependency's Capital Expenditure Programme, the Division transferred two creole bulls, four cows and two Anglo Nubian bucks from the Palmar Breeding Station. The flock of 17 Dorsian sheep was also transferred to Rodrigues where there is a greater demand and more scope for sheep breeding. In addition 17 Creole cows and heifers were purchased locally for shipment to the Dependency.

ANIMAL QUARANTINE STATIONS

21. *Quarantine Kennels, Reduit.*—The old block of kennels was demolished and the site cleared to provide training facilities for the imported police dogs. The cattery was completely renovated and enlarged to provide accommodation for cats which may be imported into the Colony. During the year 11 imported dogs underwent the six months' quarantine prescribed under the Animal Diseases Ordinance to prevent the introduction of Rabies and other diseases.

22. *Quarantine Station Fort William, Port Louis.*—The Station, which was in a derelict condition, was renovated; it was provided with a large incinerator for disposal of infected refuse. During the year, over 1,000 cage birds were quarantined. The Station was also used to house newly purchased cattle for the Dairy and Rodrigues and for carrying out tuberculin and contagious abortion tests prior to shipment.

SLAUGHTER HOUSES AND MEAT INSPECTION

23. Inspection of slaughter houses was continued throughout the year. 220 permits were issued for the slaughter of female milch cows on humanitarian grounds and 1,257 permits on a quota basis authorized by the Controller of Supplies under the Defence (Slaughter of Cattle) Order. The total slaughter of animals in the Colony of local and imported cattle during the year is as follows :—

Local Milch Bulls and bull calves	...	...	4,418
Cattle : Cows and Heifers	...	...	1,477
Local Herd cattle	...	...	804
Rodrigues cattle	...	...	885
Madagascar cattle	...	...	5,763
TOTAL	...	...	13,347

24. Meat Inspection Rules and Regulations were prepared by the Division and issued to local Slaughter House Authorities through the Director of Medical and Health Services.

25. Investigations into the religious and technical problems of humane slaughter were carried out by the Acting Senior Veterinary Officer, and a comprehensive report was submitted to the Government.

IMPORTATION OF ANIMALS

26. Inspection of animals, birds and frozen meats of various kinds imported into the Colony as per table given below was maintained in accordance with the terms of the Animal Diseases Ordinance :—

<i>Animals</i>	<i>Kilos</i>	<i>Meats</i>	<i>Kilos</i>
Cattle	6,648	Frozen Beef and Veal	274,239
Sheep	2,556	Fresh Beef	730*
Goats	3,076	Frozen Pork	4,905
Pigs	2,014	Frozen Mutton	51,536
Horses	24	Frozen Poultry	25,103
Turtles	508	Offals	4,054
Day old chicks (poultry)	28,330		
Cage Birds	1,040		

* By Air.

27. In July, imports of livestock from South Africa were restricted owing to the outbreak of Foot and Mouth Disease in the Union. This restriction chiefly affected the imports of day-old chicks and hatching eggs.

MISCELLANEOUS

28. The Senior Veterinary Officer and the Acting Senior Veterinary Officer delivered courses of lectures on Veterinary and Animal Husbandry subjects at the College of Agriculture, and lectures in relation to prevention of cruelty to animals and control of animal diseases were delivered by the Acting Senior Veterinary Officer at the Police Training School and at Police Headquarters.

IX. Land Settlement

DISPOSAL OF HOUSES ON SETTLEMENTS

1. For greater security of tenure and better maintenance it is preferable that the constructions erected on the Settlements should be the property of the lessees. It was agreed that tenants might buy their dwelling houses and ancillary constructions for a price of Rs. 500 with facilities for the payment of that sum in five equal instalments. Of the 50 houses in the four Settlement Schemes 24 had been sold to the tenants by the end of the year,

IRRIGATION WORKS

2. Irrigation works to a value of Rs. 46,839 were finished at Richelieu in the month of July 1957. Similar works, but on a larger scale, started in 1956 at Terre Rouge Settlement were completed in 1957, at a cost to Government of Rs. 122,850, or at an average, on the whole of Rs. 530 per arpent. At Terre Rouge a system of intensive agriculture will be adopted and considerable yield improvement should ensue. The rental value of the land, which was Rs. 36, will be increased to Rs. 100 per arpent per annum as from the date irrigation water becomes available.

EXTENSION OF SETTLEMENT SCHEMES

3. Funds have been provided in the Capital Expenditure Programme for establishing an allotment scheme at Palmar by clearing 200 arpents, and extending the settlement at Grand Sable and Petit Sable by approximately 75 arpents.

X. Experimental Stations

CUREPIPE EXPERIMENTAL STATION

(i) *Development*

1. A poultry unit, two stores, a garage and barn have been constructed. Thirty acres of scrub land have been reclaimed and brought under cultivation. Most of this new land has been put under grass: five acres have been planted in citrus orchards. This now completes all the projected buildings and leaves only a small acreage to be brought under cultivation.

(ii) *Fish Ponds*

2. Results are reported in Chapter XV—Fresh-water Fisheries.

(iii) *Grass*

3. Encouraging progress has been maintained in the production of cultivated grasses especially *Setaria sphacelata* (var. Kazungula and var. Bua River). It has been found that high fertilization is necessary but if this is carried out yields of 12 tons per acre per cut can readily be obtained.

Experiments were also carried out on the nutritive value of *Setaria* at different stages after cutting. It was found that the optimum stage for cutting considering yield and nutritive value is after 6-7 weeks regrowth in September-January and 3-4 weeks in February-August.

There was no significant response to cultivation of grass fields with either a Caldwell A-4 Brushcutter or a springtine harrow. Responses from nitrogen were high, but cultivation did not significantly increase the yield in the nitrogen plots.

A total of twenty-five acres has now been planted in grass and this is being used to feed the Dairyherd at the Government Dairy. The production of all grass and litter for the Livestock Division has now been undertaken by the Agricultural Division.

(iv) *Orchard Crops*

4. An area of five acres has been allocated to Citrus of which half has been planted. As far as can be seen at the present time the most satisfactory stocks for this district will be those of the Mandarin family. Rough Lemon has not grown well in the nursery and has been discarded; only a small number of Sweet Orange seedlings have been put into the field, as the Mandarin appears to be much more healthy and vigorous. Owing to a shortage of bud-wood those stocks that are due to be grafted have had to be planted out, with the object of top working them at a later date when the bud-wood becomes available.

(v) *Food Crops*

5. Results of trials carried out on the main food crops, manioc, yams and groundnuts have been quite favourable and satisfactory yields obtained. All these crops have only been grown on a relatively small scale. Outstanding has been a large scale trial of vegetables, of a more perishable nature, cabbage, cauliflower, lettuce, squash, cucumber, marrow and dwarf beans. These crops were obtained after the main season had finished, but in spite of this, yields and quality were excellent. It appears that the main vegetable season at Curepipe is during the dry season from September to December. At this time even irrigation may be necessary if maximum yields are to be obtained. There appears to be no reason why the vegetable season cannot be extended by greater utilization of the upland districts at the end of the winter when production in other areas is falling rapidly. The soils in this district are so poor that heavy fertilization is necessary if good crops are to be obtained. The other requirement for satisfactory cultivation in this area is that planting shall be correctly timed to coincide with either the onset of the dry season for vegetables or the onset of the rains for other crops requiring more tropical conditions. In the latter case it is important that such crops shall have an early start before the heavy rains make growing conditions unfavourable. Growth from May to July is very slow indeed.

CENTRAL EXPERIMENTAL STATION REDUIT

(i) *Development*

6. A labourers' mess room and bathroom and adjoining store have been completed. The road to the Central Board Building and the Stock Farm have been completed. A start has been made on the reconstruction of fields with the object of replacing the old square layout with a contour and field system. This will be a slow and expensive process as all the dividing roads have been built up to get rid of the stones from the fields. Equipment is on order to provide the Station with overhead irrigation. The Station is now more protected from wind with the development of the windbreaks already planted. Use has been made of *Acacia (Leucaena glauca)* which also serves as a fodder. These hedges provide some protection but Camphor trees have been planted in addition to give a windbreak of greater height.

(ii) *Orchard Crops*

7. All the imported strains of Orange, Grapefruit, Mandarin and Lime are now well established on stocks of Local Mandarin. Growth has been satisfactory in most cases, except for the prevalence of what is thought to be acute zinc deficiency. An orchard of about two acres has been planted with the object of determining the most satisfactory stock scion combinations for general use. Shortage of material precludes the laying out of any large scale trials at the moment, but this orchard will provide the necessary material for large scale propagation and for the preliminary impressions as to the performance of the various combinations. This orchard should be disposed of in about five or ten years by which time it should be possible to have more satisfactory stands of all varieties.

8. All Citrus growing at Reduit have suffered very considerably from a yellowing of the leaves thought to be due to zinc deficiency. In many cases this has been apparently cured by the application of a foliar spray of zinc sulphate. However, many trees have recently shown a recurrence of the symptoms. It is normal in trees affected with acute zinc shortage to display more serious symptoms during the latter half of the growing season, and it is hoped that the deficiency will yield to a more intensive treatment.

(iii) *Grasses and Fodders*

9. Experimental work was carried out on the investigation of potential grazing grasses. *Setaria sphacelata* outyielded *Chloris gayana*, *Melinis minutiflora*, *Paspalum dilatatum*, and *Pennisetum clandestinum*, when all were cut to stimulate grazing.

10. The productivity of *Acacia (Leucaena glauca)* when grown in hedges was investigated. It was found that five cuts a year yielded a total of 515 kgs per hundred foot length of hedge. This was superior to six cuts a year when the yield was reduced by 160 kgs per hundred foot length.

11. Experiments were concluded on the spacing of grasses. It was found that a spacing of less than three feet does not benefit *Setaria sphacelata*. Yields were reduced with wider spacing. With Elephant Grass (*Pennisetum purpureum*) a spacing of three feet was beneficial in the first year compared to 6 and 12 feet spacings. In subsequent years there was no significant difference in yield.

(iv) *Fibres*

12. A field of *Urena lobata* planted in November gave excellent yields. Fibre produced was estimated at 2,870 lbs per acre. This crop is very easy to cultivate given adequate water supplies early in the season.

BARKLY EXPERIMENTAL STATION

13. Good progress has been maintained in the upward trend in the sale of vegetable seed and fruit trees :—

				Rs.
Sale of seeds	...	...	...	21,471
Sale of plants	...	...	...	14,618
TOTAL	...	...	...	36,090

(Total 1956 = Rs. 32,242)

(i) *Development*

14. A watchman's quarter was converted into an overseer's house on the new land recently brought into cultivation. The construction of a green house was started in February and completed in July. Work on a new garage and barn was started in August, and is now nearly completed. An electric drier, with a tray area of forty square feet has been installed, and has assisted considerably in the production of seed.

(ii) *Citrus*

15. Shortage of budwood is still a limiting factor in the production of budded plants. At Barkly citrus has been affected by the appearance of zinc deficiency symptoms. Rough Lemon has been discarded as a stock on account of its susceptibility to Canker disease. Sweet Orange has been killed by the severity of the deficiency.

(iii) *Letchis*

16. Trial shipments of letchis to European markets have been considered for the last two years but crops have been very disappointing and no shipments have been made. In the last year the incidence of insect attack on the letchi crop has been almost one hundred per cent on mature fruits. Progress on the propagation of letchis has continued,

(iv) *Seed Production*

17. Seed production has increased during the year especially on those items where it has not been possible to meet the demand. Peas and Beans have been increased on this count to 1,027 kg. and 3,106 kg. respectively, and the demand is still increasing. In addition the usual quantities of all other items have been produced. Improvement in the packaging of all items has been achieved by the use of seed envelopes.

The use of soil-blocks for the planting of all vegetable crops for seed production is now standard practice.

All cabbage and cauliflower seed imported for testing against local strains failed to bloom under local conditions, and had therefore to be discarded for seed production. The following varieties were found to be early maturing and useful for vegetable production :—

<i>Cabbage</i>	<i>Cauliflower</i>
Brunswick	Nil.
Maincrop	
Golden Acre	

RICHELIEU EXPERIMENTAL STATION

18. On the third and fourth of July the Station was opened to the public in connection with the Silver Jubilee celebrations of the Tobacco Board. Visitors were shown recent improvements in the cultivation of tobacco, especially new methods of raising seedlings. Another feature of the celebrations was an exhibition at the Tobacco Warehouse, where the Agricultural Division put on an exhibit of general interest centering on the production of tobacco.

(i) *Development*

19. A poultry unit to house 300 birds was completed in June.

A unit of two silos was converted into a bull pen and a calving box. An underground pipe line was laid to supply irrigation water under pressure to all parts of the station. The portable pump was converted into a stationary unit and housed in a pump-house. A workshop for carpenters and the blacksmith was started in November and by the end of the year was nearly completed.

20. In the later part of the year half of the station was relaid out on a contour basis, in order to improve the use of water, both natural rainfall and irrigation water. At the same time it has been possible to increase the length of the fields to improve the utilization of mechanical equipment. A system of cropping has been devised using sugarcane as a rotational crop. The cane gives some wind protection to the arable crops which are planted on alternate strips. This system has not been thoroughly tested but no disadvantages have been observed and wind protection achieved has been considerable.

TOBACCO

21. (a) *Seed-beds*.—Investigations continued on the control of pests and diseases in seed-beds. Very good control of Red Ant is still being achieved with "Aldrin". Very striking results were obtained by treatment of the seed-beds, fourteen days before sowing, with Ethylene dibromide. The seedlings produced were more uniform and more vigorous than those from untreated beds.

Investigations on the rate of seeding showed that 2cc. of seed per 100 feet of seed-bed produced the most satisfactory plants at the transplanting stage. This rate of seeding has to be coupled with complete pest and disease control if success is to be obtained.

22.—(b) *Fields*.—Fields were planted in early December, 1956, to investigate the resistance of all varieties to Black Shank disease (*Phytophthora nicotianae* Buda de Haan). This time of the year is the worst season for this disease. All varieties except the Rg., Rg-hybrids and Yellow Mammoth showed a high degree of susceptibility. A field of $1\frac{1}{4}$ acres was planted with Yellow Mammoth, Black Shank resistant strain for seed production. Spraying with "Dieldrin" at a concentration of 1 litre of "Dieldrin" in 40 gallons of water gave very good control of leaf miners. A second spraying was carried out when the plants were one month old. In addition a further $1\frac{1}{4}$ acres was planted with Amarello for seed production.

23. An experiment was carried out to determine the effects of Ethylene dibromide in the field and in order to determine the field effect of E.D.B. when nursery treated plants are used for transplanting.

24.—(c) *Curing*.—Leaf from Belle Mare which had been found very difficult to cure in the conventional barn was used to investigate the effect of the Steam Curing Unit. Yellowing was achieved, with the unit, whereas it had previously been found impossible to give this leaf a yellow colour. The yellowing produced was not of a very high standard. The use of the steam curing unit prevented the spread of *Alternaria* leaf spot in the barn.

25.—(d) *Leaf produced* :—

	Kgs.	Value
		Rs.
Flue cured Virginian (R.E.S.) ...	652.1	5.22/kg.
Flue cured Virginian (P.E.S.) ...	829.5	4.92/kg.
Flue cured Amarello ...	793.9	5.86/kg.
Air cured Amarello ...	183.3	2.20/kg.

26.—(e) *Tobacco-seed*.—Seed issued to growers was as follows :—

	Kgs.
Amarello ...	4
Yellow Mammoth ...	$3\frac{1}{2}$
Bonanza ...	$3\frac{1}{2}$
Jamaica Wrapper ...	$1\frac{1}{2}$

POTATOES

27. Variety trials were conducted on imported Madagascar varieties, and also these were compared to English grown and South African seed. The English seed appeared to be superior in the field, but most of the crops suffered from Blight and results were not conclusive. A further trial was carried out to test the effect of overhead irrigation compared with the conventional flood system. Results were again somewhat inconclusive. A resume of the results obtained is appended.

	Tons per acre
Royal Kidney ...	9.87 ± 1.61
King George ...	8.86 ± 1.61
Blanche de France ...	6.65 ± 1.61

Royal Kidney and Blanche de France were from seed introduced from Madagascar. King George was from Scottish seed.

In a second trial the three leading varieties were as follows :—

	Tons per acre
King George ...	11.61 ± 0.41
Royal Kidney ...	10.67 ± 0.41
Blanche de France ...	8.19 ± 0.41

BEANS

28. One of the most promising field crops for Mauritius is the dwarf bean, grown as a row crop. All beans grown have been for seed production, and yields of 600 lbs to 800 lbs per acre of dried beans have been obtained. The large scale cultivation of this crop has been largely due to the control of *Melanoagromyza phaseoli* by the application of Dieldrin at the two leaf stage.

Fibres

29. The Jute substitute *Urena Lobata*, has again been grown satisfactorily, and yields of fibre in the region of 1,500 lbs per acre have been obtained. This could undoubtedly be increased if irrigation water was available in the early part of the year (cf. yields at Central Experimental Station). *Urena* has also proved itself of considerable value as a cover crop.

Mechanisation

30. Two new wheeled tractors, a Ferguson 35 and a David Brown 2D were received during the year, in addition to a 45 h.p. Fiat crawler tractor. This has greatly improved the situation with regards to mechanical equipment, and the Division is now in a position to carry out all its cultivation and clearing work. The Fowler crawler tractor and the Massey-Harris 22K reached the end of their working life. One Ferguson tractor and trailer were loaned to Rodrigues, in order to assist with the development plan. This left the division rather short of wheeled tractors to deal with the widely separated stations, and the increasing amount of mechanization which is being undertaken. In addition to the continued adaptation of equipment to row crop work the grass crop at Curepipe Station has been largely mechanised. Some difficulty is still being experienced with the satisfactory cutting of grass with the conventional cutter-bars. The production of maize silage has been largely mechanised, conventional cutting and blowing equipment working very satisfactorily.

Grasses and Fodder

31. Grassland research has centered round the production of fodder for the 16-Cow dairy. Feed requirements have been met with Elephant Grass, *Setaria sphacelata* (Bua River variety) grown under irrigation, and supplemented with Maize silage and Acacia leaf, fresh from the station and dried-leaf from Plaisance. Production of Elephant Grass has been good and four acres have been found sufficient to meet the needs of the 16 cows. A wide spacing (6ft-9ft) has been found to be most satisfactory. *Setaria* tends to flower too quickly at Richelieu for satisfactory production of leafy material.

32. Yields of 14 tons per acre of maize have been obtained in three months and silage made in a tower silo made of concrete buildings blocks. Feeding silage for three months allows the grass field to remain dormant prior to the heavy growth during January and February. Investigations have been carried out on the fodder consumption and intake of protein by dairy cows. It was determined that an acre of maize grown for silage will provide a daily ration of 19 kilos for ten cows for seventy days (i.e, 700 cow days) with no additional fodder. This takes into account all wastage of material and represents the amount actually consumed.

Dairy

33. The dairy was fully stocked with sixteen Creole cows by the end of May. Milk production has been increased gradually over the year and the average milk yield at the end of the period under review had risen to 5.68 litres including all cows, both dry and in milk. During the year heifer calves and bull calves were born at the station and a total of 26,923 litres of milk were produced. The biting fly, *Stomoxys*, caused some trouble in the earlier part of the year, but control inside the Cowshed was achieved by a regular spraying once every fourteen days of "Aldrin" and the building of a manure trap to avoid opening the doors when mucking out.

XI. Plant Pathology

TEA

The gemma-fungus disease detected on tea in 1956 at Curepipe was again observed causing severe defoliation in the same nursery. A search for hosts of the fungus in the immediate vicinity of the seedbeds and also at the Curepipe Botanical Gardens about $\frac{1}{2}$ mile away, gave the following results:—

Severely attacked plants:—loquat, mango, *Tabebuia rosea* D. C., *Bombax* sp; *Tecoma* sp; *Dracaena* (2 species), the ground orchid (*Spathoglottis plicata* Blume) and *Araucaria Cunninghamii* Sweet.

Plants lightly attacked:—*Azalea* sp; *Cassia* sp; *Citrus aurantium* L. var. *Bigaradia*, "framboise marronne" (*Rubus roridus* Lindl.). 'herbe tourterelle' (*Wickstrœmia indica* C. A. May) 'herbe conde' (*Cordia macrostachya* (Jacq.) Roem and Schult.), 'liane lingue' (*Pæderia felida* L.), privet (*Ligustrum vulgare* L.) and 3 ferns.

BANANA

2.—(a) *Corm rot*.—Diseased plants of the dwarf banana (*Musa Cavendishii* Lam.) were again found this year at l'Exile in Savanne district. The symptoms agree closely with those of corm rot caused by *Clitocybe tabescens* (Scop.) Bres., but no fructifications were obtained for identification of the pathogen. Trials to induce the formation of the sporophores on material kept under varying conditions in the laboratory failed.

(b) *Panama disease*.—Diseased plants of the Gingeli variety (Lady's finger) were found at Rose Hill and at Grand Port.

AVOCADO

3. Avocado fruits in Rose Hill, attacked by the Natal fruit fly *Ceratitis (Pterandus) rosa* Karsch, were found affected by a secondary soft rot, resulting in a dropping of the immature fruit. A bacterium was isolated from the diseased tissues which reproduced the disease upon inoculation into healthy fruits. It was identified by Dr. W. J. Dowson at the University of Cambridge as the soft rot organism *Pectobacterium carotovorum* var. *Aroideae*.

LEEK

4. A soft rot of leek occurred in the demonstration plot of the Extension Service at Vacoas. A bacterium was isolated which proved pathogenic upon reinoculation into healthy leek plants. It is considered to be the same soft rot organism as mentioned above.

ARTICHOKES

5. A blight of flower-heads of artichoke, characterised by the production of more or less extensive black lesions from the tip of the bracts of the inflorescence backwards, occurred at the Vacoas demonstration plot and at the Central Experiment Station, Reduit. A bacterium was isolated from the diseased bract tissues which was successfully inoculated into and reisolated from healthy young artichoke heads. The pathogen has not yet been identified.

LEAF SPOT OF BEAN

6. An experiment with Perenox, a copper preparation and "Murphane Wettable", a zineb formulation, was carried out at the Barkly Experiment Station, to try and control the disease caused by the fungus *Isariopsis griseola* Sacc. The two fungicides were used at a concentration of 2.5 grammes per litre, 5 sprayings being made, at weekly intervals. The Murphane plot showed practically complete control of the disease. A count was made at the end of the experiment of the number of spots per square inch area on twenty leaves selected at random in the plots, i.e., 60 counts in each case, and the following figures obtained—the dry weight of seeds produced per square foot is also given :—

	Control	Perenox	Murphane
No. of spots counted	1,196	567	46
Spots per sq. in leaf surface (mean) ...	20	9.4	0.7
Grms. seed per sq. foot	963	1,016	1,620

ANTIBIOTIC TRIALS

7. Trials on a larger scale than in the previous year were made with antibiotics to determine the possibility of controlling the bacterial wilt disease of tomato caused by *Pseudomonas solanacearum* (Smith) Dowson. This disease often causes very heavy losses in the field.

8. Two Streptomycin preparations, viz., "Streptomycin Agricultural Spray," from the Murphy Chemical Co. Ltd., and "Agrimycin—100," an American formulation also containing Terramycin, were used at concentrations of 100, 200, 400 and 500 parts per million of Streptomycin, the sprayings being effected at varying intervals in the several experiments. The trials were carried out at the Royal Botanical Gardens Experiment Station, at the Barkly Experiment Station and on a small planter's estate in Black River. The results indicated that the Streptomycin preparations used had no effect in controlling the disease.

LEAF SPOT CAUSED BY NEMATODES

9. The occurrence in Rose Hill of a leaf spot of the Zinnia plant had been mentioned in the Annual Report of the Division for 1951 (p. 69). Foliar nematodes were again observed this year at Rose Hill, Quatre Bornes, Reduit and Vacoas, causing heavy spotting on dahlia, zinnia, chrysanthemum and verbenas.

GERANIUM (PELARGONIUM)

10. Pelargonium rust caused by *Puccinia pelargonii zonalis* was detected for the first time in the island, causing severe spotting and leaf drop of the common geranium (*Pelargonium zonale*). The disease was observed at Rose Hill, Foreal. and Quatre Bornes, but was not seen on *Pelargonium pellatum*.

BAUHINIA SP.

11. A bacterial disease of *Bauhinia* sp. was observed killing a tree at Curepipe. A bacterium was isolated which, however, failed to reproduce the disease upon inoculation into young *Bauhinia* plants.

FLAMBOYANT (POINCIANA REGIA BOJ.)

12. A disease which killed a Flamboyant tree at a private residence in Quatre Bornes was investigated in December. The wood had a distinct acid smell on being cut, and many of the vessels had turned red or light to dark brown; besides a clear, yellowish to brown liquid oozed from a number of these vessels, whilst a few beads were dirty—white in colour. Strangely, these beads, transferred aseptically to culture tubes, failed to grow and therefore appeared sterile. Cultures of the discoloured used tissues, however, yielded a bacterium which was successfully inoculated into and reisolated from young flamboyant plants. The pathogen produced rapid wilt upon inoculation into young tomato plants, and drops of white gum oozed from their stems upon sectioning. The cultures and the culture medium upon which the pathogen was grown in the laboratory turned brown upon ageing. It is therefore concluded that the disease is caused by *Pseudomonas solanacearum* (Sm.) Dowson, the agent of the bacterial wilt of Solanaceous and other plants. The disease had already been observed in Mauritius (1952). ✕

SUGARCANE

13. The results of investigations on Ratoon stunting and Chlorotic streak, the main pathological problems confronting the sugar industry in Mauritius are abstracted from the Annual Report of the Mauritius Sugar Industry Research Institute for 1957, through the courtesy of the Director.

RATOON STUNTING DISEASE

14.—(a) A histo-chemical test using 2, 3, 5—triphenyl tetrazolium chloride for diagnosing ratoon stunting disease was developed.

(b) A severe drought which prevailed during the year has shown that the disease can be acute under abnormally dry as well as under super humid conditions.

(c) The virus seems to affect adversely the germination of cuttings.

(d) No contamination by the ratoon stunting virus takes place during the short hot water treatment of cuttings against chlorotic streak.

(e) Fibre content of cuttings does not affect temperature distribution within the cutting during the hot water treatment.

CHLOROTIC STREAK

15. (f) Experimental evidence shows that aerial transmission does not take place and that the disease is acquired through the soil.

(g) Symptomless canes from dry areas are free from the pathogen. Plants raised from diseased cuttings in a dry locality may show leaf streaks at first, but there is a gradual loss of symptoms which is related to a disappearance of the disease.

(h) As a disease-escape measure, plantings in regions where the disease prevails should be properly timed. Experimental results have shown that plantations should not be established during the summer months.

(i) Reductions in yield of 73 per cent were obtained with Ebene 1/37 when plots planted with diseased cuttings were compared to those established with heat treated material. It follows that the cultivation of this variety so well suited to the high rainfall area could not have been continued so long without the heat treatment.

(j) For effective heat treatment in water at 52°C for 20 minutes, cuttings of more than 5 cms in diameter should be discarded.

(k) *Cuscuta chinensis* when growing vigorously on a suitable "mother plant" has been established on sugarcane. It is now being used for transmission studies instead of *Cassytha filiformis* which has been found unsuitable. The possible passage of the disease through moisture transfer between intertwined roots growing in sterilized soil is being investigated.

FIJI DISEASE IN MADAGASCAR

16. The increased vigilance in the control of sea and air traffic in view of the potential menace due to the presence of Fiji disease in Madagascar has continued. Sugarcane stalks were intercepted in the luggage of an incoming passenger.

Some useful information has been obtained on the field reaction to the disease in Madagascar of several cane varieties cultivated in Mauritius.

HOT WATER TREATMENT

17. As a result of recommendations made by the Research Institute, the Sugar Producers' Association is setting up two electrically heated tanks for the treatment of 6,500 tons of cuttings annually for the establishment of nurseries free from ratoon stunting disease. Concurrently, the Sugar Planters' Rehabilitation Fund is financing the establishment of nurseries for small planters; cuttings for these nurseries will be treated in the hot water tank of the Research Institute at Reduit.

It is estimated that the nurseries will provide sufficient disease-free material for all plantations to be made in 1960.

MISCELLANEOUS DISEASES

18. Miscellaneous Diseases :—

✓ *Canna* sp.—Bacteria wilt at Reduit, caused by *Pseudomonas solanacearum* (Sm). Dowson.

✗ *Zinnia*—Severe leaf spot and flower blight by *Alternaria Zinniae* Pape, at various places.

✗ *Raspberry*—Leaf spot by *Septoria rubi* West, at Curepipe.

✗ *Avocado*—Dieback by *Glomerella cingulata* (Stonem.) Spauld and Schrenk.

212-7-7 *Tobacco*—Severe attack by the brown blight fungus *Alternaria longipes* (Ell. and Ev.) Mason in some fields.

Euphorbia pilulifera (Jean Robert)—Downy mildew, *Peronospora* sp. and Powdery mildew, *Erysiphe* sp.

Acacia—Root rot of seedlings on specimens from Rodrigues, caused by an undetermined species of *Phytophthora*.

Cassia sp. and *Citrus* sp.—Pink disease caused by *Corticium salmonicolor* Berk and Br. at Curepipe.

Barberton daisy—(*Gerbera Jamesonii* Hook.) Collar rot caused by *Sclerotium Rolfsii* Sacc.

PLANT INSPECTION AT THE CUSTOMS AND AIRPORT

19. The control of the importation of plants and plant parts has continued.

XII. Entomology

Since March, all work concerning sugarcane insects has been taken over by the Mauritius Sugar Industry Research Institute. As a result, the Entomological Division of the Department of Agriculture is now concerned with all the other entomological problems pertaining to secondary crops, i.e., tea, tobacco, vegetable crops, citrus and other fruit crops, stored products and animal pests.

PESTS OF PIGEON PEA (*Cajanus cajan*)

2. As a result of the work on the biological control of the cajan pests : *Maruca testulalis* Geyer and *Etiella zinckenella* Tr., the project of introducing the parasites *Heterospilus* sp. and *Phanerotoma* sp. through the Commonwealth Institute of Biological Control could not be materialised through lack of host material for breeding work.

The parasite *Bracon cajani* Mues., first recovered in 1954, is nowadays spreading in fairly large numbers in some localities. Great hope can therefore be entertained that the effect of this parasite will be beneficial.

A second parasite, *Eiphosoma* sp. (? *annulatum* Cress), imported in 1953, was first recovered during the year in two localities. It is too early to draw any conclusion on the work of this parasite.

CONTROL OF LEAF HOPPER : *Perkinsiella Saccharicida* Kirk

3. From March 1956 to June 1957, 11 shipments of *Cyrtorhinus mundulus* Bred., an egg predator of *Perkinsiella saccharicida* Kirk., the vector of Fiji disease of sugarcane, were received from Hawaii through the courtesy of Dr. Bianchi, Senior Entomologist of the Experiment Station of the Hawaiian Sugar Producers' Association. 24,000 young nymphs were released in maize and cane fields. In september 1957, nymphs and adults were recovered in cane fields. It now seems that this insect is established in Mauritius.

THE GIANT SNAIL : *Achatina fulica* Bowdish

4. Through the kind co-operation of Dr. Fernando of the Department of Agriculture, Ceylon, four consignments of *Lamprophorus tenebrosus* Walker, a predator of the giant snail, *Achatina fulica* Bowdish, were introduced with a view to checking the damage of the giant snail. From January to March, 1,600 larvae were received in very good condition and released. This predator has not yet been recovered in the field after exhaustive searches during the rainy season.

FRUIT FLIES

5. In presence of the steady increase of fruit flies—*Dacus* spp., *Ceratitis capitata* Wied. and *Pterandus rosa* Karsch—during the last 4 years on cucurbits, peach, loquat, avocado, guava, mango and other fruits, an attempt has been made to introduce parasites from Hawaii to further the control of these pests. From March to December, 10 shipments of parasites were received from Dr. Q. C. Chock, the Territorial Entomologist, Board of Commissioners of Agriculture and Forestry, Hawaii. Ten different species of parasites were introduced comprising 30,756 individuals, of which 24,256 were received alive. Amongst the species sent were the following : *Opius incisi* Silv., *Opius oophilus* Silv., *Opius tryoni* Cam., *Opius formosanus* Full., *Opius compensans* Silv., *Opius taiensis* Full., *Dirhinus giffardi* Silv., *Syntomosphrum indicum* Silv., *Opius novacaledonicus* Full., and *Opius longicaudatus* Ahsm. Of these parasites, only one species, *Syntomosphrum indicum* Silv., has so far been recovered. *Opius oophilus* Silv. and *Opius longicaudatus* Ahsm. were found in the laboratory readily to parasitise *Dacus* spp., *Ceratitis* spp., and *Pterandus rosa* Karsch.

6. A project is contemplated for obtaining mass shipment of parasites from Hawaii in the forthcoming months. A study on the bionomics of *Pterandus rosa* Karsch, the most destructive of the above species, has been started. This fruit fly was found fairly common on a secondary host plant *Terminalia catappa* L.

PESTS OF TEA AND CITRUS

7. A survey on the various pests of tea and citrus was started. On tea plants the following mites were found : *Hemitarsonemus latus* Banks and *Brevipalpus phoenicis* Geijskes. Although fairly abundant in some localities, these mites were not causing economic losses.

8. On citrus plants the following pests were noticed in fairly large numbers during the year :—

(a) *Toxoptera citricidus* Kirk., the vector of Tristeza disease,

(b) the citrus psyllid, *Spanioza erytrea* del G.,

(c) *Contarina citri* Barnes,

(d) *Prays citri* Mill.,

(e) The phytophagous mites : *Phyllocoptura oleivora* Ahsm. and *Brevipalpus phoenicis* Geijskes. A study on the bionomics of these pests has started.

THE COCONUT BEETLE : *Oryctes Rhinoceros* L.

9. This beetle was again reported causing severe damage to coconut plantations in Diego Garcia. The scoliid wasp, imported from Zanzibar in 1951, has been recovered but its beneficial effect has not yet been very significant.

MISCELLANEOUS

10. The newly recorded parasite of *Maruca testulalis* Geyer, *Bracon cajani* Mues., was sent to the Territorial Entomologist in Hawaii on an exchange basis. Over 1,500 individuals were sent by air and arrived at destination in very good condition.

11. At the request of the Indian Central Coconut Committee two consignments of *Scolia oryctophaga* Coq., comprising 306 wasps (i.e. 154 females and 152 males), were sent by air to South India in August—September for experimental purposes on the rhinoceros beetle, *Oryctes rhinoceros* L.

12. Numerous searches were made on behalf of the Territorial Entomologist in Hawaii with a view to obtaining the scoliid wasp, *Tiphia parallela* Sauss. Owing to its scarcity no shipment was possible.

13. The new records for the year are the following : *Aulacaspis rosae* (Bouche), a serious pest of rose : *Opilus* sp. ? *insignifemnis* Granger, a parasite of the fruit fly *Pterandus rosa* Karsch.

14. The card indexing of all the entomological literature in the Division was completed. 3,049 different publications and separates have been classified under 35 headings. An author's index has also been prepared.

15. Dr. Surany, Entomologist of the South Pacific Commission, visited the Island to investigate the diseases of sugarcane white grub *Clemora smithi* Arrow and the coconut beetle, *Oryctes tarandus* Ol. Results of his findings are not yet available.

16. Lectures in Agricultural Entomology were delivered as usual at the College of Agriculture by the Entomologist. At the request of the Mauritius Sugar Industry Research Institute the Entomologist delivered 3 lectures to planters on the parasites of moth borers of sugarcane in Mauritius.

XIII. Agricultural Chemistry

Periodical visits were paid to experiment stations, and more especially where experiments were being carried out in conjunction with the Agricultural Division, on the yield and nutritive value of *Setaria* grass, *Setaria spachelata*, and elephant grass, *Pennisetum purpureum*.

ANALYSES

2. During the year 610 samples were analysed, involving 1,030 determinations. That was an increased output over the preceding years. The analyses were mostly of a routine nature although a number of them were done for a research purpose, e.g. the protein matter determination of grass species.

Fertilizers

3. 125 samples were analysed for their content of nitrogen, phosphoric acid and potash. These included 90 samples of phosphatic guano, the best of which contained 40 per cent of phosphoric acid, expressed on the fresh material.

Water

4. Only one sample (from Souillac) was analysed for drinking purposes. It was found to be quite suitable. The periodical pH check of fish-pond water was continued. 122 samples were analysed for the Agricultural Division. It is interesting to note that in the drought period (November), the water from some fish ponds at Curepipe reached a pH of 8, even 9 (the optimum pH is 6.5). The reason for this was not investigated from a chemical point of view.

5. 74 samples of various feeding stuffs for the purpose of ration blending have been analysed for the Maize Mill. Different grades of pig meal were forwarded by the Livestock Division. The latter are still experimenting upon a standard mixture of pig meal.

Silage

6. In conjunction with the Agricultural Division, experiments were continued on silage preparation. Samples of maize plants were analysed before and after silage making.

Fodder

7. A large number of analyses (about 170) for dry matter and protein content were carried out upon *Setaria* and elephant grass.

Miscellaneous

8. Of the various other analyses performed, the following are worthy of note :—

(a) *Gammexane*.—An investigation was started on the analysis of gammexane dipping. Some difficulties were experienced on the determination of the lethal part of the insecticide, viz, the gamma isomer of 1 : 2 : 3 : 4 : 5 : 6 hexachlorocyclohexane, more especially as the latter is in dilute suspension in the dipping solution. Research on the problem will continue in 1958.

9.—(b) *Milk*—Two samples of milk were analysed for the World Health Organization Team now attached to the Health Department. The fat content of both samples was found to be very low (1.9 and 1.6) respectively.

10.—(c) *Sugar products*—The analysis of molasses and alcohol for export was carried out as in the past. About 30,000 litres of Grade A alcohol (95° G.L.) were exported on results of analysis.

XIV. Agricultural Engineering

Except for the operation of the Yeast Factory and Maize Mill, the Agricultural Engineering Division remained temporarily closed, pending the resumption of duty of the Agricultural Engineer who is on study leave until September 1958, and recruitment of an Assistant Agricultural Engineer.

RICHELIEU MAIZE MILL AND YEAST FACTORY

2. The Maize Mill continued the manufacture of special preparations for poultry, chicks, pigs, cows, bulls, calves and horses as well as the production of ureated molasses. For these purposes a variety of materials including wheat bran, maize, poonac, molasses, fishmeal, oats, bone meal, cod liver oil, dried milk, aureomycin and minerals were purchased from which 968 tons of animal feeds were manufactured. 987 tons were sold as compared with 966 tons in 1956.

The Maize Mill Extension Shop at Rose Hill continued to operate successfully during 1957.

MANUFACTURE OF YEAST TABLETS

3. 16,560,000 yeast tablets were manufactured from imported South African Yeast. Sales to Government departments amounted to 15,754,000 tablets, 231,500 being sold to the public.

MANUFACTURING ACCOUNTS

4. Statements of accounts are given at Appendix E.

XV. Fresh Water Fisheries

DEVELOPMENT

Two new ponds were constructed at the Royal Botanic Gardens Pamplémousses, in order to investigate the performance of species of *Tilapia* under the climatic conditions prevailing there. As far as can be judged at present, these ponds should be somewhat more productive as water control is excellent and the higher temperatures prevailing considerably stimulate the growth of algae. It is thus much easier to keep a good green colour in the water than is possible at Curepipe.

No results are yet available from this centre. It has, however, been found that a very good water colour is obtainable very readily. The growth of fish appears to be more rapid than at Curepipe.

PRODUCTION

2. The seven production ponds constructed at Curepipe in the previous two years were fully stocked at the beginning of the year. Growth measurements, pH and temperatures at the ponds were recorded during the year and information was obtained on the influence of temperature on the breeding habits of the three species under investigation.

3. It would seem that *T. macrochir* is the most satisfactory species for the Curepipe district. On the whole results are slightly lower than those recorded in the previous year. This is partly accounted for by the severe drought in October, November and December when the water level in most ponds dropped alarmingly. For a considerable part of the year manure supplies were not available in sufficient quantity to keep the ponds adequately supplied. In future ample supplies will be available from the Government Dairy and the rate of fertilization will be considerably increased. In the Curepipe district the water supplying the ponds is so low in nutrients that heavy fertilization has to be carried out in order to provide sufficient food for the fish. A further disadvantage is the high rainfall in the summer months which causes the ponds to overflow with the consequent loss of any added nutrients. This latter defect can be overcome by careful pond design, whereby the pond receives little or no drainage water from the surrounding land.

4. On Pond 1, a duck house was constructed in the previous year and a flock of ducks has been gradually built up. This should materially assist the production of fish when the number of ducks has been increased sufficiently. Rigorous selection among the ducks has resulted in a fairly slow rate of increase but present numbers are around fifty.

5. A satisfactory cheap food has not yet been found for direct feeding. Grass directly fed is readily taken by the *Tilapia melanopleura* but does not seem to greatly affect the growth rate, probably due to the low nutritive value of the Herbe d'Argent (*Ischaemum aristatum*) which has been mainly fed. It is hoped that other grasses when established will be more satisfactory. There seems to be no doubt that more intensive feeding is the clue to higher yields since when numbers are reduced in the ponds the growth rate is materially increased.

6. Yields of fish in untreated ponds are extremely low and there is a considerable increase in the growth rate when chemical fertilizers are added. However, the effects of fertilizers seem to disappear rapidly and weekly application is advocated over the whole year.

7. A fourth species of *Tilapia* was introduced during the course of the year, *T. Zillii*. Unfortunately this species appears to start breeding at an even earlier age than *T. melanopleura*, and the great disadvantage of this latter species is its extreme fecundity. The other species *T. nilotica* and *T. macrochir* do not breed so readily and their breeding season is not so prolonged as that of the *T. melanopleura*. In one pond with all three species together only *T. melanopleura* succeeded in producing fry. Whether this is due to the eggs of the other species being eaten by the *T. melanopleura* or whether it is due to the inhibition of breeding of the *T. macrochir* and *T. nilotica*, by the third species is not known. It is thus apparent that in a pond with all three species the *T. melanopleura* will dominate and eventually become the only fish left in the pond.

XVI. Rodrigues

The activities of the Rodrigues Division during the year may best be described under three headings in order to give a complete picture of the work now being pursued in the Dependency. Firstly, the development plan itself will be described as the year saw the adoption of several new proposals. Secondly, the influences of the year on the method of carrying out the work will be described. Thirdly and finally, the position at the end of the year in regard to the major projects will be described.

THE PLAN

2. During the year the Government of Mauritius called for a revision of the capital expenditure programme and several additions and alterations were made to the Rodrigues development plan. A coordinated agriculture and forestry plan was drawn up in consultation with the head of each department concerned and the Ministry of Agriculture.

3. The Land Utilization plan given at the end of this chapter was accepted as a suitable basis for current and future agriculture and forestry development. The land in Rodrigues was considered under three main headings :—

A. Cattle Walk

This area at present is a practically treeless ribbon of pasture land running around the island between the coastline and the upland area. Cattle are ranched on its 11,000 acres (Rodrigues total acreage is 26,000) there are no fences and few dwelling houses. Several coastal filaos plantations are planted at river estuaries. It is now proposed to develop this area by improving conditions of grazing by shade tree planting improve protection from steep hill and coastal erosion by tree planting and convert small areas of rich alluvial flats into rice and vegetable gardens. In table form the land utilization will therefore be :—

(a) Grazing with shade trees at 50' x 50'	..	..	8,520 acres
(b) Protective steep hill forests	...	...	2,000 "
(c) Coastal mangrove plantations	...	...	50 "
(d) Coastal vav plantations	...	...	20 "
(e) Coastal filao plantations	...	...	300 "
(f) Vegetable gardens and rice plots	...	...	110 "

Estimated total acreage	...	...	11,000 "
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B. The Forested Areas

4. The second type of land considered was the forest land of Rodrigues. This area totals about 6,000 acres, at present made up of 3,000 acres of private forest, 1,500 acres of government plantations and protective scrubland, and 1,500 acres of Jamrosa.

It is proposed to utilize this 1,500 acres of Jamrosa scrub as follows :—

(a) Mountain Reserves	...	...	154 acres
(b) Protective forest on steep slopes	...	...	550 "
(c) Economic Government Forest	...	...	370 "
(d) Elephant Grass—Acacia plantations for breeding centres and fodder reserves	...	...	420 "

Estimated total acreage	...	...	1,494 "
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C. Other Area

5. The final area considered is approximately 9,000 acres in extent and is the heavily inhabited and cultivated upland area. Here the land is being badly eroded and large areas have been abandoned from cultivation due to soil erosion, lack of manuring, and other essential good farming practices. It is proposed to utilise this area as follows :—

(a) Unit Family Farms	...	...	7,000 acres
(b) Rice lands	...	...	80 "
(c) Protective Forestry (steep slopes and windbreaks)	...	...	1,500 "
(d) Economic Government Forestry	...	...	230 "
(e) Elephant Grass—Acacia fodder reserves	...	...	200 "

Estimated total acreage	...	...	9,010 "
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6. On the completion of this plan therefore the position will be that 3,500 unit family farms will have been leased out. Each farm will be canalised and dammed to provide soil and water conservation. The unit farmer will be required to tie-ridge his land (not flat-planting as before). The farms will be contour-strip cropped and under rotation, using elephant grass-acacia strips for fodder supply for the family milk cow. Six government breeding centres will be in operation, to supply the unit farmers with good milk cows, as the small unit farms will not be big enough to rear their own replacement stock. A groundnut oil expelling plant will be in operation so that each family may grow its own supply, as well as producing the valuable groundnut cake for animal food. About 80 acres of rice lands should go a long way to providing the island's rice supply. An area of 600 acres of government economic forest planted in the upland area will ensure an adequate timber supply for firewood and housing when supplemented by the production from 300 acres of coastal filao.

The capital development plan which will entail on an expenditure of Rs. 4,848,000 over the 5 year period 1957-62 has been phased as follows :—

				Rs.
1957-58	...	...	...	1,069,000
1958-59	...	...	...	1,288,600
1959-60	...	...	...	875,400
1960-61	...	...	...	830,000
1961-62	...	...	...	785,000
TOTAL	...	...	...	4,848,000

7. If the Rodriguans can prove themselves to be hard working, efficient, farmers, it is anticipated that they can put their island's economy into a position where they can export more and better animals, groundnut oil, ghee, and small fruits such as citrus and pineapples; at the same time they can reduce their rice importation and reverse the imports of milk and milk products, and vegetable cooking oils.

INFLUENCES ON OPERATION OF THE PLAN

8. A cyclone struck the island in January, and a severe drought prevailed during the last half of the year. These two unfortunate, yet nevertheless technically most informative, experiences affected the plan of work in the following ways :—

(a) Disposal of run off water

Line step dams discharging water *down* the slope have been replaced by strip step dams which discharge *across* the slope, at a gradient of about 1 in 100, into a paved or grassed discharge channel running down the slope. The strip step dams are better in that the run off water traverses them easily, they do not become completely blocked by soil, and the water they retain can seep across the full length of a slope giving a much better distribution of conserved water than line step dams do. The subsidiary graded canals between the strip step dam lines have also been enlarged to overcome blockage by soil.

(b) Tie ridging

The original idea of leasing land after government had excavated canals and dam lines on it, and leaving the tenant himself to do all the tie ridging, had to be abandoned as the canals and dams when not protected by tie ridges became blocked by soil eroded from the 20 ft contour crop strips. In this respect tie ridging proved itself the most important soil and water conservation principle to be practised in Rodrigues.

(c) Soil and Water Conservation

The experiences of the year made it possible to sectionalise the type of work to be done under the soil and water conservation vote which previously had been looked upon as work only producing unit farms. The work was extended to cover not only the cost of preparing unit farms for lease, but also building twenty small and three large concrete water conservation reservoirs, about 54,000 yards of interception canals and purchase of suitable irrigation equipment.

(d) Relief works

The cyclone and drought led to poor harvest and the latter half of the year found the population short of home grown food, but with plenty of imported food in the shops. The agricultural development works were looked to as cash to buy food.

Unfortunately the drought had hardened the ground to such an extent that the labour force gave a low output with the hand hoe. The position was critical, most days at the morning meal breaks the labour had literally nothing to eat; lay off of labour due to low output was indicated but on instructions from Mauritius the work continued as a famine relief measure for the population. It is estimated that this relief work cost the plan approximately Rs 180,000 over the last 6 months of 1957.

POSITION OF MAJOR PROJECTS AT CLOSE OF 1957

Experimental and demonstration plots

9. The ten demonstration plots which are strategically placed throughout the island on specially selected badly eroded and abandoned land have, during 1957, proved to be most powerful elements in convincing local farmers of the benefits of a mixed rotational farming system practised with the ridge cultivation and strip cropping on contours. Many groups and individuals have visited the plots for demonstration and explanation and the results have been excellent.

Fruit tree planting

10. The start made last year on the planting of mangoes at 24 feet $\times$ 24 feet with filao or eucalyptus interplanted at 6 feet $\times$ 6 feet in the La Ferme—Baie Topaze area was continued. Most of the hill tops in the La Ferme area have now been planted. Many failures were recorded due to drought which made worse the normally adverse planting conditions on the bare hill tops of Rodrigues. However, considering these adverse conditions a satisfactory take has been achieved as can be seen from the following list showing a count of living trees on hill tops in the bare La Ferme area :—

<i>Locality</i>	<i>Mangoes</i>	<i>Filao</i>	<i>Eucalyptus</i>	<i>Jak</i>
B. Topaze	2,500	18,500	2,000	500
Mont Sable	375	2,709	—	—
Limon	201	—	—	—
Mont Tuffe	242	1,530	—	—
Gd. La Fouche	186	—	—	—
Papayes	56	656	34	—
Papayes—Deux Montagnes ...	444	4,496	212	—
Mt. Bigarade	48	1,245	—	—
Deux Montagnes	260	835	45	—
Citadelle	85	260	—	—
Citron	193	312	—	—
Chateau de Fleur	436	1,280	—	—
Maricial	92	—	—	—
Mt. Cabris	54	—	—	—
TOTAL ..	5,372	31,823	2,291	500

11. Very satisfactory hill top plantings have also been made at Citron Donis (approx. 10 acres), Chateau d'eau (5 acres), Trefles (6 acres), Latanier (5 acres), Trois soleil (4 acres).

Where vetivert lines were planted between the rows of young seedlings they offered admirable protection from the strong dessicating wind.

Livestock Breeding Centres

12. Further government breeding centres were started at Oyster Bay, St. Gabriel, Le Chou and Malabar and by the end of the year all were nearing constructional completion and elephant grass-acacia fodder plantations were being established around them.

13. A small herd of locally purchased goats were housed in stalls at Oyster Bay and records commenced on their milk production and breeding capacity.

14. The locally purchased cows housed at Baie Topaze and Centre were sold off during the year to be replaced by cows of the Creole milk breed imported from Mauritius. The local Rodrigues cows proved so wild when stalled as to be almost unmanageable and from a breeding point of view a very heterogeneous collection. It was therefore decided to adopt a policy of keeping the Creole milk breed. By the end of the year 27 creole cows and 2 bulls had been imported and were housed at the St. Gabriel Breeding Centre. Demands by local unit farmers for purchase of these cows from the breeding centre were already being made towards the end of the year, although it will be almost two years hence before production will be able to meet these demands.

15. The pure bred Berkshire pigs from Australia all maintained perfect health and all farrowed satisfactorily ; 40 weaners were sold to local farmers. Two Anglo-Nubian bucks and several Dorsian sheep were imported from Mauritius and are being kept under observation.

Swamp Rice Schemes

16. Satisfactory crops of rice were harvested by local growers and during the year about 10,000 lbs of clean rice passed through the rice huller operated by the Department.

Soil and Water Conservation

17. At the end of the year 320 unit farms were leased out to local farmers. One large concrete water conservation dam and two smaller dams had been completed in the Mangue catchment area. A small experimental plot receiving irrigation from these dams was producing an excellent maize crop despite the severe drought. Approximately 15,000 feet of piping has been laid and 18,000 feet of interception canals excavated.

Survey of Crown Lands

18. All unit farms and hill top forests have been marked out with boundary stones and vetivert lines. A Government surveyor is mapping these boundaries.

Machinery and Equipment

19. A Lister generator (3 phase 225-450 V) has been installed at Citronelle to operate the Mica Groundnut Oil Expellor and a Bental Wizard Hammer Mill.

RODRIGUES

LAND UTILIZATION PROPOSALS

(A) CATTLE WALK		(B) FORESTED AREAS		(C) OTHER AREAS	
<i>Estimated area</i> - - - 11,000 <i>acres</i>		<i>Estimated area</i> - - - 6,000 <i>acres</i>		<i>Estimated area</i> - - - 9,000 <i>acres</i>	
(a) Vegetable Plots	100	(a) Privately owned Forests	3,000	(a) Unit (Agricultural) Farms	7,000
(b) Protective Forest	2,000	(b) Economic Plantations and Scrub	1,500	(b) Rice Cultivation	70
(c) Rice Cultivation	10	(c) "Jamrosa" Scrub	1,500	(c) Economic Forestry (Plantations)	230
(d) Grazing with shade trees	8,520			(d) Breeding Centres—Fodder Reserves	200
(e) Costal "Var" plantation	20			(e) Protective Forestry	1,500
(f) Costal Mangrove plantation	50				
(g) Costal Filao plantation	300				
TOTAL	11,000	TOTAL	6,000	TOTAL	9,000

NOTE—Item (a) "Jamrosa" Scrub (1,500 acres) to be utilised as under :—

	<i>acres</i>
(a) Mountain Reserves	154
(b) Economic Plantations	370
(c) Protective Forest (Steep Slopes)	550
(d) Breeding Centres + Fodder Reserves	420
TOTAL	1,494

PROPOSED UTILIZATION OF 1,500 ACRES "JAMROSA" SCRUB ITEM (iii) OF (B)

<i>Serial No.</i>	<i>Locality</i>	<i>Mountain Reserves</i>	<i>Economic Forestry</i>	<i>Protective Forestry (Steep Slopes)</i>	<i>Fodder Reserves</i>	<i>Breeding Centres</i>	<i>Totals</i>
		Acres					Acres
1	Grand Montagne	... 62.25	—	—	—	—	62.25
2	Mt. Linnon	... 34.00	—	—	—	—	34.00
3	St. Gabriel	... —	50.00 A	70.00 A	40.00 A	60.00 A	220.00
4	Les Choux	... —	20.00 A	120.00 A	40.00 A	60.00 A	240.00
5	Malartic	... 37.00	—	—	—	—	37.00
6	Mt. Lubin—Piton	... 20.00	60.00 A	120.00 A	40.00 A	60.00 A	300.00
7	Cascade Pigeon	... —	80.00 A	200.00 A	20.00 A	—	300.00
8	Solitude	... —	160.00 A	40.00 A	40.00 A	60.00 A	300.00
TOTAL		... 153.25	370.00	550.00	180.00	240.00	1,493.25

A. Staff

(as at 31st December)

Appointment	Name	Remarks
Director of Agriculture ...	M. N. LUCIE-SMITH, M.A., B.Sc. Agr. (Lond), Dip. Agr. (Wye), D.I.C.T.A. (Trinidad)	On leave 2.12.57
Deputy Directors ...	G. A. NORTH COOMBES, O.B.E., B.Sc. Agr. (Read.), Dip. Agr. (Maur.) 1 vacancy	Acting Director 2.12.57

ADMINISTRATIVE AND FINANCE DIVISIONS

Chief Finance Officer ...	I. FELIX	Appointed 21.11.57
Chief Executive Officer ...	L. O. RENÉ	Appointed 21.11.57
	R. S. BUGUTH	Acting 21.11.57

In addition there are :

- 2 Senior Executive Officers
- 3 Executive Officers
- 2 First Grade Clerks
- 10 Second Grade Clerks
- 6 Typist/Stenographers

AGRICULTURAL DIVISION

Senior Agricultural Officers	L. JOHNSON, B.Sc., Hons. (Leeds)	Acting Deputy Director 2.12.57
	R. C. ANSLOW, M.Sc. (Read.), B.Sc., Hons. (Dunelm)	
	A. d'EMMEREZ DE CHARMOY, M.B.E., Dip. Agr. (Maur.)	
Agronomist	L. A. SUZOR, Dip. Agr. (Maur.)	On leave 15.7.57 to 18.12.57
Horticulturist	J. H. JULIEN, Dip. Agr. (Maur.)	
Agricultural Officers ...	G. BAURISTHENE, Dip. Agr. (Maur.)	Is also Superintendent of Schools
	P. REGNARD	
	L. MOORLEE, Dip. Agr. (Maur.)	On leave 12.4.57
	J. DUHAMEL, Dip. Agr. (Maur.)	
	J. MAROT	
	I. FAKIM, Dip. Agr. (Maur.)	
	B. ROY, B.Sc. Agr. (Wales) Dip. Agr. (Maur.)	Seconded as Lecturer in Agriculture on 20.8.57
	M. SOOLTANGOS, Dip. Agr. (Maur.)	

In addition there are :—

- 13 Assistant Agricultural Officers
 - 1 Surveyor
 - 1 Assistant Surveyor
 - 7 Overseers Grade I
 - 6 Overseers Grade II
- 1 vacancy

AGRICULTURAL CHEMISTRY DIVISION

Appointment	Name	Remarks
Chemist	S. BELCOURT, B.Sc., Dip. Agr. Sc. (Wales), Dip. Agr. (Maur.)	
Assistant Chemist	F. BERCHON, Dip. Agr. (Maur.)	
In addition there are :—		
3 Scientific Assistants		2 temporary

PLANT PATHOLOGY DIVISION

Plant Pathologist	G. ORIAN, M.B.E.	Temporary
Assistant Plant Pathologist	L. ORIEUX, B.Sc. (Lond.) D.I.C.	returned from study leave on 29.12.57

In addition there are :—

- 1 Plant Inspector
- 1 Scientific Assistant

CENTRAL BOARD DIVISION

Registrar	S. STAUB, A.R.T.C. (Glas.), A.M.I. Mech. E., Dip. Agr. (Maur.)	Acting Deputy Director of Agriculture 2.12.57
Assistant Registrar and Chief Chemist	P. J. GALEA, Dip. Agr. (Maur.)	Acting Registrar 2.12.57
Accountant	J. G. GNANY, A.A.C.C.A.	Appointed 20.6.57
Assistant Accountant	Vacant	
Assistant Chemist	R. THELEMAQUE, Dip. Agr. (Maur.)	

In addition there are :—

- 1 Investigational Officer and Weighbridge Inspector
- 3 Senior Test Chemists
- 24 Test Chemists (crop only)
- 24 Samplers (crop only)

AGRICULTURAL COLLEGE DIVISION

Principal	J. R. LAGESSE, B.Sc. (Lond.)	
Lecturers	R. LATULIPE, B.Sc. (Lond.)	
	A. E. ROUILLARD, M.S. (Louis.)	
	1 Vacancy	
Assistant Lecturers and Laboratory Demonstrators	P. GUERANDEL, Dip. Agr. (Maur.)	On contract
	R. BURRENCHOBAY, B.Sc. (Lond.)	
	K. LUTCHMEENARAIDOO, B.Sc. Agr. (Reading), Dip. Agr. (Maur.)	

ENGINEERING DIVISION

Agricultural Engineer	E. LIMFAT, B.Sc. (Lond.) A.C.G.I., A.M. I. Chem.E.	On study leave
Assistant Agricultural Engineer	{ Vacant	

Appointment	Name	Remarks
In addition there are :—		
1 Scientific Assistant		
1 Supervisor, Yeast Factory and Maize Mill		

ENTOMOLOGICAL DIVISION

Entomologist ...	J. R. WILLIAMS, M.Sc., B.Sc. Hons. (Bristol), D.I.C., F.R.E.S.	resigned on 28.2.57
	A. MOUTIA, Dip. Agr. (Maur.), F.R.E.S.	appointed on 1.3.57
Associate Entomologist...	Vacant	
Assistant Entomologist...	J.E.A. ORIAN, B.Sc., F.R.E.S., F.Z.S., Dip. Agr. (Maur.) R.A.C.	

In addition there are :—

3 Scientific Assistants	2 vacancies
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LIVESTOCK DIVISION

Senior Veterinary Officer	A. DARNE, F.R.C.V.S., Dip. Agr. (Maur.)	On leave 28.7.57
Veterinary Officer ...	J. U. D. SHUJA, M.R.C.V.S.	On 3 years contract. Acting Senior Veterinary Officer 28.7.57
Supernumerary Veterinary Officer	S. LIONNET, B.V.S., M.R.C.V.S., Dip. Agric. (Maur.)	appointed 20.8.57
Animal Husbandry Officer	I. H. PROVERBS, B.Sc. Agr., Animal Husbandry, M.Sc. (Nutrition)	On secondment from Nyasaland from 31.8.57
Laboratory Technologist	L. WEBB, Dip. Bio. (Lond.) A.I.M.L.T. (Lond.), M.I.B. (Lond.)	
Senior Stock Inspectors	W. HADDON C. DELAITRE	On study leave in New Zealand

In addition there are :—

1 Scientific Assistant	...	On leave prior to termination of contract
12 Stock Inspectors ...	...	1 on study leave, 1 vacancy
1 Temporary Stock Inspector		
1 Overseer		
19 Livestock Assistants	...	1 vacancy

TEA DIVISION					
Appointment	Name			Remarks	
Tea Officer ...	...	R. B. J. DEANE ...	...	...	On leave 16.12.57
Assistant Tea Officers ...	...	D. N. ANDREWS	...	...	Acting Tea Officer 16.12.57
1 vacancy					
Agricultural Officer ...	...	A. BAISSAC, Dip. Agric. (Maur.)	Acting Assistant Tea Officer 16.12.57		

In addition there are :—

- 2 Assistant Agricultural Officers
- 1 Manager, Midlands Estate
- 1 Assistant Surveyor (temporary) vacant
- 5 Overseers Grade II

RODRIGUES DIVISION	
Senior Agricultural Officer	P. L. HOTCHIN, B.Sc. Agr. (Leeds) D.T.A. (Trinidad)
Agricultural Officer ...	C. M. COURTOIS, Dip. Agr. (Maur.)

In addition there are :—

- 2 Assistant Agricultural Officers
- 1 Overseer, Grade I
- 4 Overseers, Grade II.

FISHERIES DIVISION	
Fisheries Officer ...	J. DE B. BAISSAC, R.A.C.
Chief Inspector ...	J. MOMPLÉ

In addition there are :—

- 3 Inspectors
- 3 Sub-Inspectors
- 16 Head Guards
- 36 Guards.

B. Boards and Committees for 1957

(i) BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES

The Financial Secretary—*Chairman*

The Director of Agriculture—*Vice Chairman*

Ex-Officio Members

The Financial Secretary, or in his absence the Deputy Financial Secretary

The Director of Agriculture

The Director of Public Works and Surveys

The Conservator of Forests

The Registrar of Co-operative Societies

The Fisheries Officer

Nominated by His Excellency the Governor

The Honourable A. M. Osman, O.B.E., M.L.C.

The Honourable A. L. Nairac, C.B.E., Q.C., M.L.C.

The Honourable G. Forget, M.L.C.

The Honourable V. Ringadoo, M.L.C.

The Honourable A. Venkatasamy, M.L.C. (died in August)

Nominated by the Chamber of Agriculture

Mr. Paul Hein

Nominated by the Tea Committee

Mr. P. N. A. Harel

Nominated by the Hemp Producers' Syndicate

Major Amédée Maingard de Ville-ès-Offrans

Nominated by the Tobacco Board

Mr. E. F. Cripps, M.B.E.

Nominated by the " Association des Eleveurs "

Mr. Robert Doger de Spéville

Nominated by the " Société de Technologie Agricole et sucrière "

Mr. Maurice Paturau

To represent the Millers

Mr. Claude Noël

To represent the Planters

Capt. Marius d'Hotman de Villiers.

The Board held seven meetings during the year.

(ii) AGRICULTURAL COLLEGE ADVISORY BOARD

The Director of Agriculture—*Chairman*

The Principal—*Vice-Chairman*

Dr. the Honourable C. E. Millien, M.L.C.

Nominated by His Excellency the Governor

Mr. P. G. Anthony—on overseas leave as from August, 1957—replaced
by Dr P. O. Wiehe.

Mr. Maurice Martin

Nominated by the Chamber of Agriculture

Mr. L. Baissac, M.B.E.

Mr. R. Hein, Q.C., Chevalier de la Légion d'Honneur

Nominated by the Société de Technologie Agricole et Sucrière

Mr. René Leclézio

Mr. P. de Sornay, Chevalier de la Légion d'Honneur

Nominated by the Association of Former Agricultural Students

Mr. Jacques Dupont de Rivaltz de St. Antoine

The Board held eight meetings during the year.

(iii) CENTRAL BOARD

Mr. M. Rault, District Magistrate—*Chairman*

Mr. A. Harel

Mr. F. North Coombes

} *Millers' representatives*

Mr. G. Rey

Hon. A. M. Osman, O.B.E.

} *Large Planters' Representatives*

Mr. M. Burrenchobay, M.B.E.

M. J. Chundunsing

} *Small Planters' Representatives*

Honourable A. M. Osman, O.B.E., after his appointment as Minister of Agriculture and Lands, was replaced by Mr. J. Dookun.

The Board held twenty-six meetings during the year.

(iv) TOBACCO BOARD

Ex-Officio Members

The Director of Agriculture—*Chairman*

The Commissioner of Excise—*Vice Chairman*.

The Accountant General or any officer of his Department deputed by him

The Agronomist or any officer of the Department of Agriculture nominated by the Director of Agriculture

The Manager, Tobacco Warehouse

Appointed by His Excellency the Governor

The Manager of the British American Tobacco Co. (Mauritius) Ltd., or his representative

Mr. A. G. Rey

Mr. D. Sewraz

Mr. R. Ducler des Rauches

Mr. A. Furreed

The Board held twelve meetings during the year.

(v) LAND SETTLEMENT ADVISORY COMMITTEE

The Senior Deputy Director of Agriculture—*Chairman*.

The Honourable A. M. Osman, O.B.E., M.L.C., (for part of the year only)

The Honourable V. Ringadoo, M.L.C.

The Honourable G. Venkatasamy, M.L.C. (died in August)

The Civil Commissioner (North)

The Civil Commissioner (South)

The Civil Commissioner (Moka—Flacq)

The Civil Commissioner (Plaines Wilhems—Black River)

The Registrar, Co-operative Department

The Senior Agricultural Officer i/c Extension Service

The Committee held three meetings during the year.

(vi) TEA COMMITTEE

The Controller of the Tea Industry (Director of Agriculture)—*Chairman*.

Consumers' Representatives

Dr. The Honourable C. E. Millien, M.L.C.—*Vice-Chairman*.

The Honourable G. Venkatasamy, M.L.C.*

Manufacturers' Representatives

Mr. L. Ramdin

Mr. J. Pilot.

Planters' Representatives

Mr. L. Seegobin

Mr. P. N. A. Harel

Additional Appointed Members

Mr. M. Martin

Mr. M. Merven.

The Committee held ten meetings during the year.

*Died in August. Replaced by the Honourable J. N. Roy, M.L.C., in November.

OTHER BOARDS AND COMMITTEES

Departmental Officers have served on the following :—

Board of Examiners of the College of Agriculture*

Board of Examiners for the Registration of Agricultural Chemists*

Cane Release Committee†

Comité de Collaboration Agricole Maurice—Réunion—Madagascar

Customs Tariff Advisory Board

Cyclone and Drought Insurance Board

Executive Committee, Board of Agriculture, Fisheries and Natural Resources‡

Fisheries Advisory Committee †

Irrigation Committee †

Land Acquisition Board

Malaria Advisory Board

Mauritius Sugar Industry Research Institute Executive Board

Research Advisory Committee, M.S.I.R.I.

Sack Factory Board

Sugar Industry Rehabilitation Fund Committee *

Sugar Industry Reserve Fund Committee

Sugar Millers' Rehabilitation Fund Committee *

Sugar Millers' Rehabilitation Fund Committee *

C. Legislation

Ordinance No. 1 of 1957	...	...	To amend the Tobacco Board Employees' Provident Fund Ordinance 1950.
Ordinance No. 4 of 1957	...	...	To amend the Tea Industry Control Ordinance 1949
Ordinance No. 14 of 1957	...	...	To amend and consolidate the law relating to the compulsory insurance of the sugarcane crops of the Colony against cyclone and drought and for other matters connected therewith.
Ordinance No. 24 of 1957	...	...	To amend the Trade Marks Ordinance (re. import of eggs)
Ordinance No. 25 of 1957	...	...	To consolidate and amend the law relating to prevention of cruelty to animals.
Ordinance No. 27 of 1957	...	...	To amend the importation of Plants (Diseases Prevention) Ordinance.
Ordinance No. 29 of 1957	...	...	To amend and consolidate the Board of Agriculture, Fisheries and Natural Resources Ordinance 1953.
Ordinance No. 32 of 1957	...	...	To amend the Sack Factory Ordinance 1951
Proclamation No. 4 of 1957	...	...	To proclaim the rate of the duty leviable under the Central Board (Costs of Administration) Ordinance 1951, on the Sugar of the 1956 crop exported from the Colony
Proclamation No. 7 of 1957	...	...	To provide for the protection of wild birds
Proclamation No. 9 of 1957	...	...	To prohibit the exportation of maize to the Chagos Islands
Proclamation No. 14 of 1957	...	...	To authorize the use of large nets for fishing at specified places during the period extending from the 1st October 1957 to the 31st January 1958
Govt. Notice No. 11 of 1957	...	...	The Sugar Industry Reserve Funds Ordinance 1948
Govt. Notice No. of 27 of 1957	...	...	The Agricultural Chemists Ordinance
Govt. Notice No. of 65 of 1957	...	...	The Tea Industry Control Ordinance 1949
Govt. Notice No. 68 of 1957	...	...	The Tea Industry Control Ordinance 1949.

*The Chairman a departmental officer

† A Committee of the Board of Agriculture, Fisheries and Natural Resources

‡The Vice-Chairman a departmental officer,

D. List of Publications and Contributions to Literature by Officers of the Department of Agriculture during 1957

<i>Name of Author</i>	<i>Title of Paper</i>	<i>Name, Volume No. Page Nos. of periodical in which published</i>
R. C. Anslow ...	A note on an improved technique in establishing <i>Setaria sphacelata</i> from seed	Empire Journal of Experimental Agriculture (in print-volume not yet known)
R. C. Anslow ...	Investigations into the potential productivity of <i>Acacia</i> (<i>Leucaena glauca</i>) in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice, No. 1, Vol. 36 pp. 39—49
L. Johnson ...	A brief outline of the history of Tobacco Research in Mauritius	Tobacco Board Silver Jubilee Publication
L. Johnson ...	Some observations on the use of overhead irrigation in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice. No. 6, Vol. 36 pp. 292—300
A. d'Emmerez de Charmoy	L'érosion des terres en pentes cultivées en canne	Revue Agricole et Sucrière de l'Ile Maurice—No. 3, Vol. 36 p. 121
A. d'Emmerez de Charmoy	La culture du haricot	Revue Agricole et Sucrière de l'Ile Maurice—No. 4, Vol. 36 p. 181
G. Orian ...	Une maladie de quelques plantes ornementales causée par un nematode foliaire	Revue Agricole et Sucrière de l'Ile Maurice—No. 5 Vol. 36 pp. 261—264, 1957
L. A. Moutia ...	Les parasites des borers de la canne à sucre et du <i>Clemora</i> à Maurice	Revue Agricole et Sucrière de l'Ile Maurice—No. 3, Vol. 36 pp. 127—132
L. A. Moutia ...	Considérations sur le complexe biologique des Lépidoptères nuisibles à l'embrevadier à Maurice	Revue Agricole et Sucrière de l'Ile Maurice—No. 5, Vol. 36 pp. 256—260
J. de B. Baissac ...	Contribution à l'étude des poissons de l'Ile Maurice. VI.	Proceedings of the Royal Society of Arts and Sciences of Mauritius, Vol. I, part 4, 1955.

E. Richelieu Maize Mill and Yeast Factory

RICHELIEU MAIZE MILL

Manufacturing account of the Yeast Factory for the year ending 30th June 1957

	Rs.	c.		Rs.	c.
To cost of powder ...	11,572	99	By cost of production transferred		
To wages and cola ...	23,428	21	to Trading account ...	37,385	00
To electricity ...	2,383	80			
TOTAL ...	37,385	00	TOTAL ...	37,385	00

Trading account as at 30th June 1957

	Rs.	c.		Rs.	c.
To cost of production from			By sales to the public ...	1,375	00
Manufacturing accounts ...	37,385	00	By sales to Government De-		
To stock of tablets on 1.7.56 ...	14,251	50	partments ...	82,910	00
To gross profit transferred to			By stock of tablets on 30.6.57 ...	9,016	50
P and L account ...	41,665	00			
TOTAL ...	93,301	50	TOTAL ...	93,301	50

Balance Sheet of the Animal Feeding Stuff Department as at 30th June 1957

LIABILITIES		ASSETS	
	Rs c		Rs c
Accumulated profits ... 113,163 74		Stock of Commodities :—	
add profit 1955-56 ... 21,464 01		raw ... 169,829 39	
	134,627 75	manufactured ... 3,276 60	
Accountant General			173,105 99
(advance) ...	64,855 92	Alse thread ...	836 34
Salaries of staff ... 15,101 00		Stores ...	5,152 05
Nett profit c/f... 38,776 04		Molasses tank ...	800 00
	53,877 04	Safe ...	250 00
		Lorry ... 4,560 64	
		less depreciation ... 912 13	
			3,648 51
		Cubing and Pelleting	
		machine ... 63,492 09	
		less depreciation ... 3,174 60	
			60,317 49
		Spectrophotometer...	9,250 33
TOTAL ... 253,360 71		TOTAL ... 253,360 71	

Statement of Animal Feeding Stuffs processed during the year ending 30th June 1957

RECEIVING DEPARTMENT :—				Kilos	In Kilos	Out Kilos
Stock on 1.7.56						
Poonac ...				36,910		
Molasses ...				81,235		
Fish Meal ...				10,575		
Salt ...				225		
Urea ...				4,689		
Bagassillo ...				75,755		
Baled Bagasse ...				42,224		
Lucerne ...				10,445		
Wheat Bran ...				14,645		
Bone Meal ...				4,450		
Cod Liver Oil ...				1,100		
Oats ...				4,800		
Dried Milk ..				2,040		
Meat Milk ...				8,621		
Wheaten Flour ...				8,260		
					305,974	
PURCHASES :—						
Molasses ...				182,150		
Wheat Bran ...				240,160		
Poonac ...				80,000		
Salt ...				1,000		
Wheaten Flour ...				31,920		
Bagassillo ...				25,270		
Oats ...				49,320		
Baled Bagasse ...				95,585		
Fish Meal ...				41,200		
Lucerne ...				40,460		
Cod Liver Oil ...				4,829		
Dried Milk ...				3,000		
Meat Meal ..				21,640		
Bone Flour ...				5,000		
					821,534	
Carried over ...					1,127,508	

	Kilos	In Kilos	Out Kilos
<i>Brought forward ...</i>		1,127,508	
To MILLING DEPARTMENT :—			
Poonac	106,620		106,620
To MIXING DEPARTMENT :—			
Molasses	181,788		
Fish Meal	36,480		
Wheat Bran	183,220		
Lucerne	38,570		
Bagassillo	34,142		
Baled Bagasse	27,255		
Salt	1,135		
Urea	2,730		
Bone Meal	4,560		
Cod Liver Oil	4,510		
Oats	34,570		
Dried Milk	3,118		
Meat Meal	21,380		
Wheaten Flour	29,960		
			603,415
SALES			
Poonac	1,200		
Molasses	8,760		
Oats	6,600		
Lucerne	200		
Bone Meal	850		
Wheat Bran	600		
			18,210
DELIVERED TO GOVERNMENT CHEMIST FOR ANALYSIS :—			
Wheaten Flour	165		165
STACK LOSS :—			
Baled Bagasse	39,389		
Bagassillo	32,510		
Poonac	7,720		
Meat Meal	151		
Wheaten Flour	95		
Fish Meal	25		
Bone Meal	15		
Lucerne	10		
Cod Liver Oil	2		
			79,917
BALANCE OF STOCK ON 30.6.57 :—			
Poonac	1,370		
Molasses	72,837		
Fish Meal	15,270		
Salt	90		
Urea	1,959		
Bagassillo	34,373		
Lucerne	12,125		
Baled Bagasse	71,165		
Wheat Bran	70,985		
Bone Meal	4,025		
Cod Liver Oil	1,417		
Oats	12,950		
Dried Milk	1,925		
Meat Meal	8,730		
Wheaten Flour	9,960		
			319,181
TOTAL ...		<u>1,127,508</u>	<u>1,127,508</u>

	Kilos	In Kilos	Out Kilos
MILLING DEPARTMENT :—			
<i>From Receiving Department :—</i>			
Poonac	106,620	106,620	
To FLOUR STORE :—			
Poonac Flour	104,895		
Industrial Loss	1,725		106,620
		106,620	106,620
FLOUR STORE :—			
Stock on 1.7.56			
Poonac Flour	7,238		
<i>From Milling Department :—</i>			
Poonac Flour	104,895	112,133	
To MIXING DEPARTMENT :—			
Poonac Flour	110,765		
STACK LOSS :—			
Poonac Flour	83		
BALANCE OF STOCK ON 30.6.57 :—			
Poonac Flour	1,285		112,133
TOTAL		112,133	112,133

MIXING DEPARTMENT :—

From Receiving Department :—

Molasses	181,788	
Fish Meal	36,480	
Wheat Bran	183,220	
Lucerne	38,570	
Bagassillo	34,142	
Baled Bagasse	27,255	
Salt	1,135	
Urea	2,730	
Bone Meal	4,560	
Cod Liver Oil	4,510	
Oats	34,570	
Dried Milk	3,115	
Meat Meal	21,380	
Wheat Flour	29,960	
		603,415

FROM FLOUR STORE :—

Poonac Flour	110,765	110,765
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FROM MAIZE DEPARTMENT :—

Maize Rice	3,350	
Maize Flour	261,960	265,310

To Animal Feeding Stuffs
Department

979,490
(net)

TOTAL

979,490 979,490

ANIMAL FEEDING STUFFS DEPARTMENT :—	Kilos	In Kilos	Out Kilos
Stock on 1.7.56			
Special Maize Mixture ...	2,170		
Poultry Feed	2,670		
Cow Feed	3,800		
Chick Feed	580		
Ureated Molasses (75 per cent)	802		
Ureated Molasses (100 per cent)	574		
Special Cow Feed	2,060		
Horse Feed	355		
Calf Feed	20		
		13,031 (gross for net)	
ROSE HILL EXTENSION SHOP :—			
Poultry Feed	3,530		
Chick Feed	500		
Cow Feed	100		
		4,130 (gross for net)	
FROM MIXING DEPARTMENT :—			
Horse Feed	24,480		
Poultry Feed	569,630		
Special Maize Mixture (Pigs) ...	48,960		
Cow Feed	67,830		
Chick Feed	72,930		
Ureated Molasses	90,780		
Special Cow Feed	73,440		
Calf Feed	27,530		
Bulls Feed	9,180		
New Pig Feed	12,240		
		997,000 (gross for net)	
SALES :—			
Poultry Feed	573,990		
Special Maize Mixture (Pigs) ...	49,915		
Cow Feed	70,500		
Ureated Molasses	89,100		
Special Cow Feed	75,350		
Chick Feed	73,045		
Horse Feed	24,500		
Calf Feed	27,150		
Bulls Feed	9,000		
New Pig Feed	11,750		
		1,004,300	
STACK LOSS :—			
Ureated Molasses (75 per cent)	802		
Ureated Molasses (100 per cent)	4		
		806	
BALANCE OF STOCK ON 30.6.57 :—			
Poultry Feed	950		
Special Maize Mixture	815		
Cow Feed	1,030		
Ureated Molasses	2,100		
Special Cow Feed	150		
Calf Feed	400		
Chick Feed	695		
Horse Feed	335		
Bulls Feed	180		
New Pig Feed... ..	490		
		7,145	
Carried over ...	1,014,161	1,012,251	

	Kilos	In Kilos	Out Kilos
<i>Brought forward</i> ...		1,014,161	1,012,251
ROSE HILL EXTENSION SHOP :—			
Poultry Feed	890		
Chick Feed	270		
Special Maize Mixture ...	400		
Cow Feed	200		
Unreated Molasses	150		1,910
TOTAL ...		1,014,161	1,014,161

STATEMENT OF MAIZE PROCESSED DURING THE YEAR ENDED 30.6.57

RECEIVING DEPARTMENT :—

DRY MAIZE STORE :—

Stock on 1.7.56	20,864		
Purchases	517,390	538,254	
To Milling Department ...	326,895		
Stack loss	3,569		
Balance of Stock on 30.6.57 ...	207,790		538,254
TOTAL ...		538,254	538,254

MILLING DEPARTMENT :—

From Receiving Department ...	326,895		
From Ground Maize Store (Maize Rice)	565	327,460	

TO GROUND MAIZE STORE :—

Rice	20,250		
Flour	302,010		
Industrial loss	5,200		327,460
TOTAL ...		327,460	327,460

GROUND MAIZE STORE :—

Stock on 1.7.56			
Richelieu Maize Mill	415	8,610	
Rose Hill Extension Shop ...	150	—	
From Milling Department ...	20,250	302,010	
TOTAL ...	20,815	310,620	

To Mixing Department

(Animal Feeding Stuff) ...	3,350	261,960	
Sales	16,550	48,260	
To Milling Department ...	565	—	

BALANCE OF STOCK ON 30.6.57 :—

Richelieu Maize Mill	50	400	
Rose Hill Extension Shop ...	300	—	
TOTAL ...	20,815	310,620	

F. Conversion Table

1 Arpent	...	...	...	...	1.043 acres
1 Gaulette	...	...	...	...	10.6 feet
1 Metric Ton	...	...	...	...	1,000 kilos
1 Long Ton	...	...	...	...	1,016 kilos
1 Kilo	...	...	...	...	1,000 grams
1 English pound	...	...	...	...	453.6 grams
1 Hundredweight	...	...	...	...	50.803 kilos
1 Cord	...	...	...	...	92.82 cubic feet
1 Gallon	...	...	...	...	4.546 litres
1 Rupee	...	...	...	...	1/6 d. sterling,

